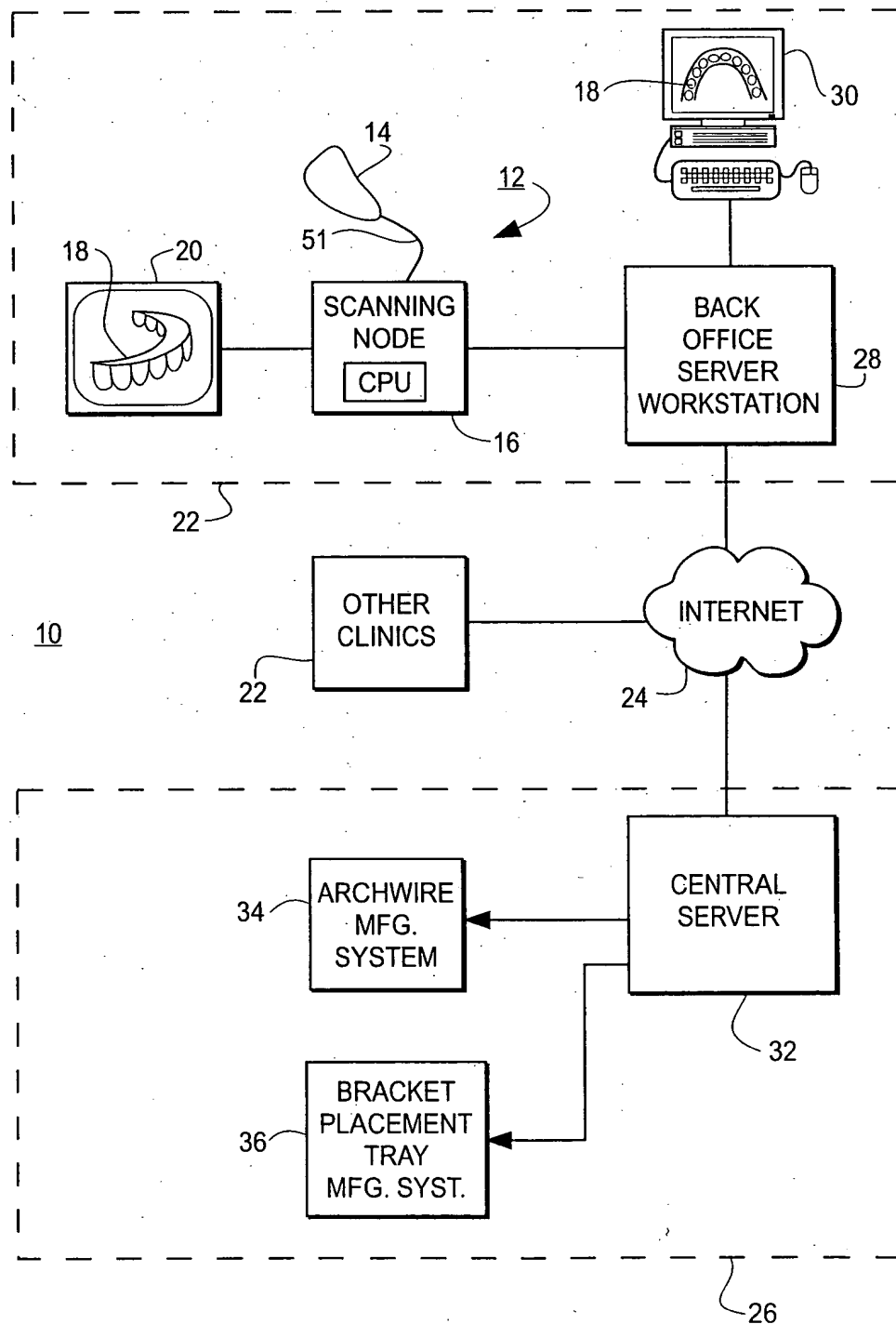




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FIG. 1



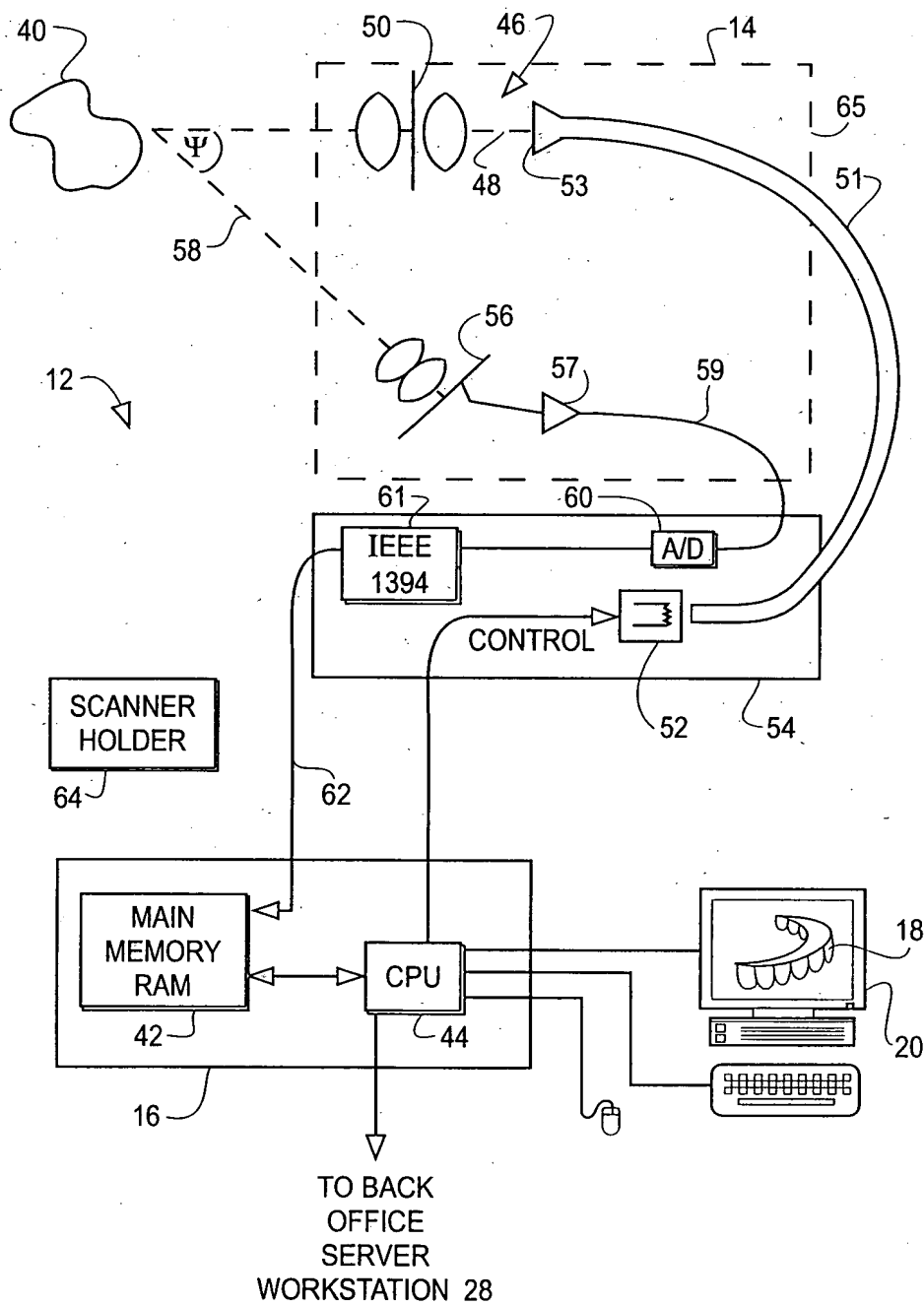


FIG. 3

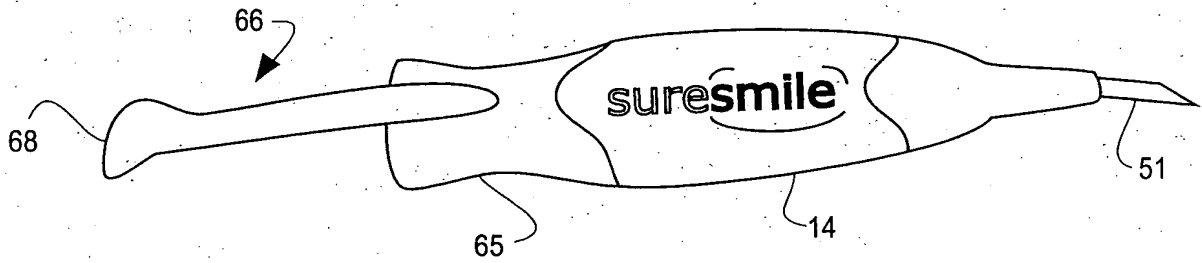


FIG. 4

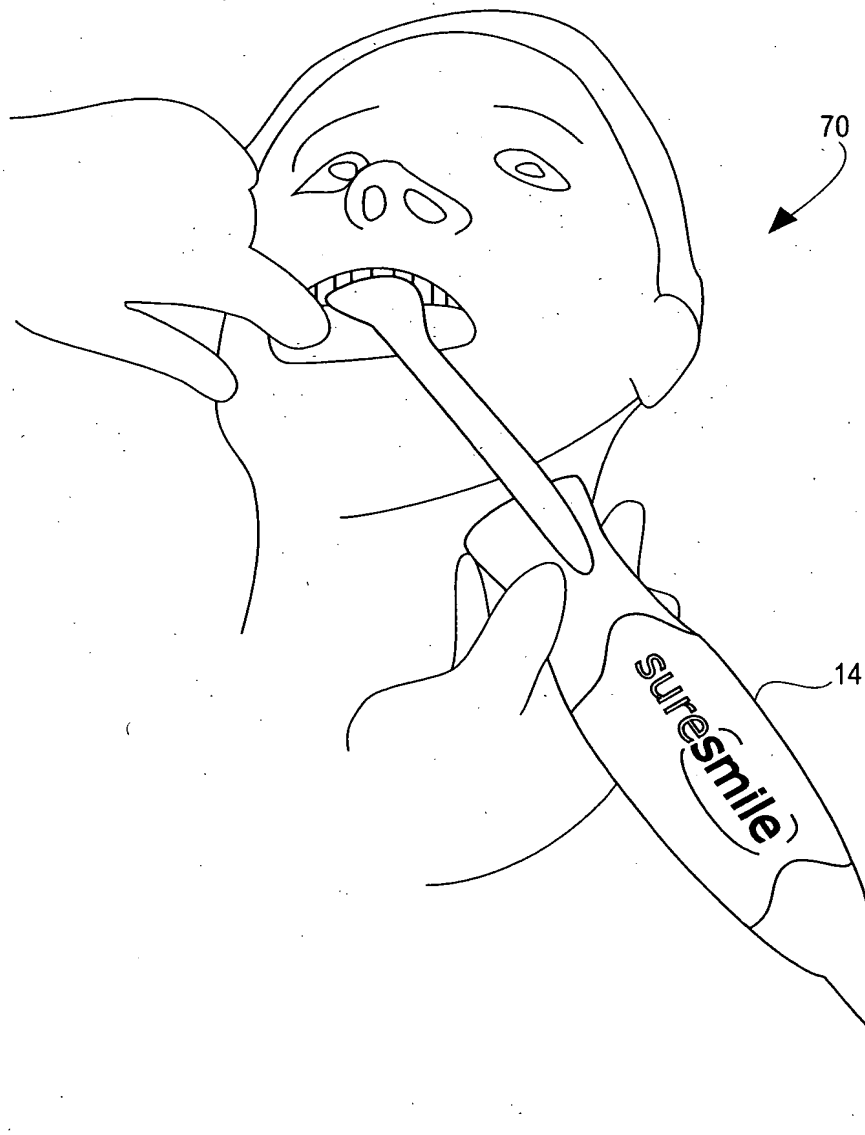
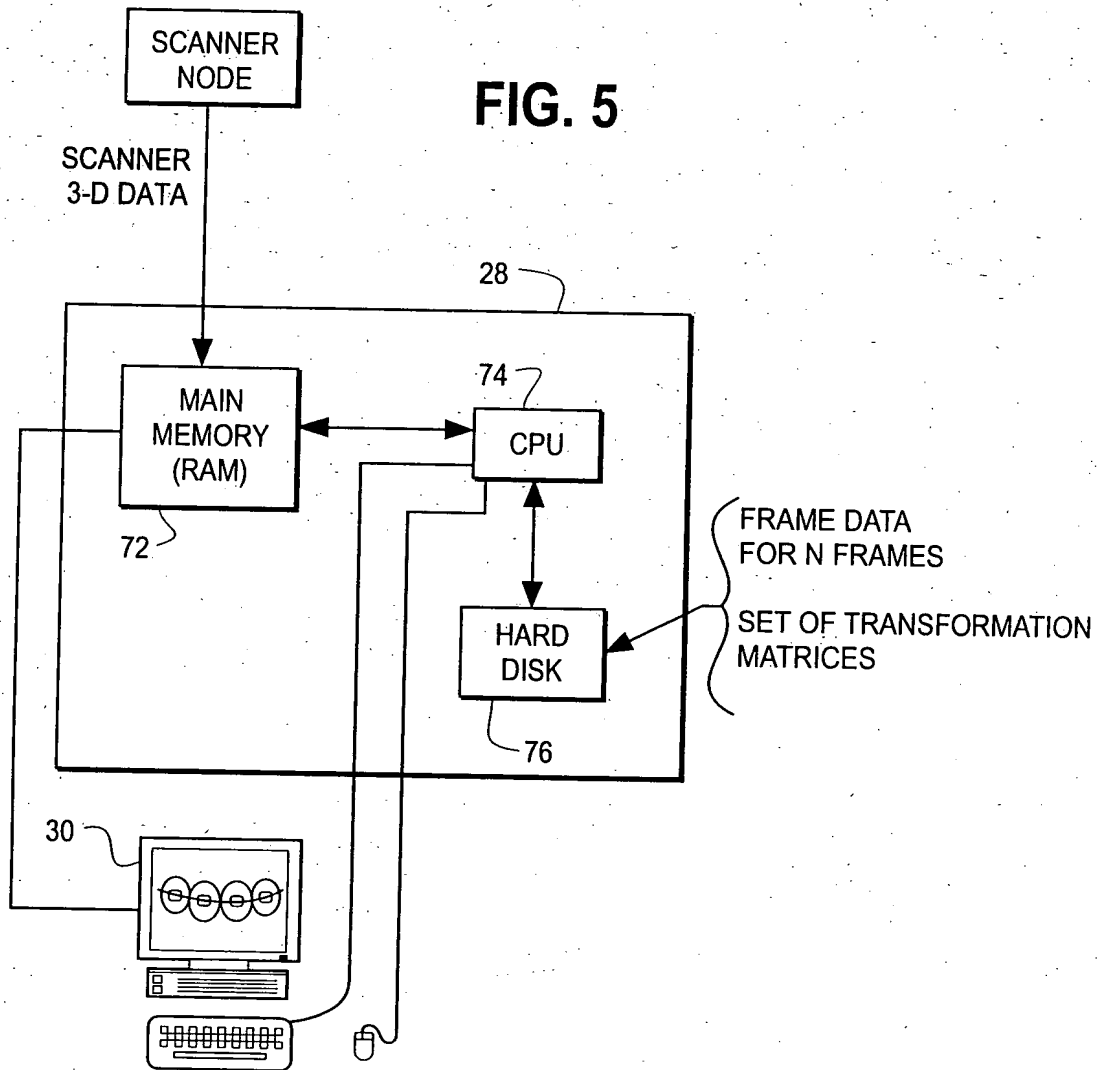
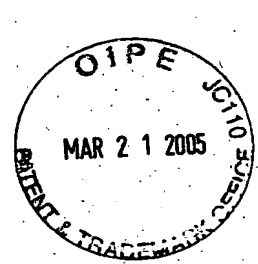


FIG. 5





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FIG. 6

3- DIMENSIONAL IMAGE CAPTURE (PER FRAME)

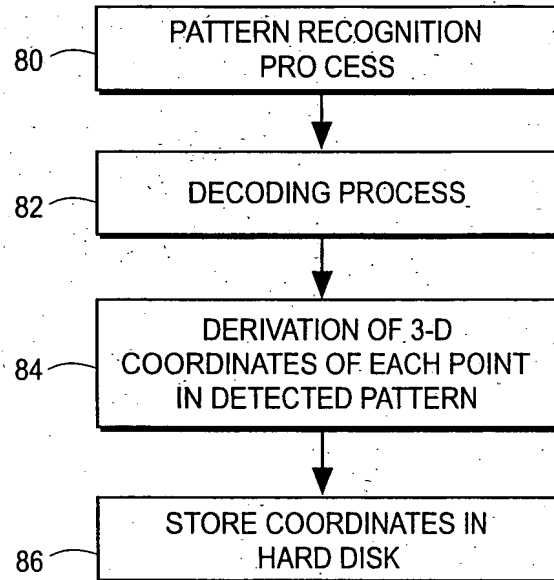


FIG. 7

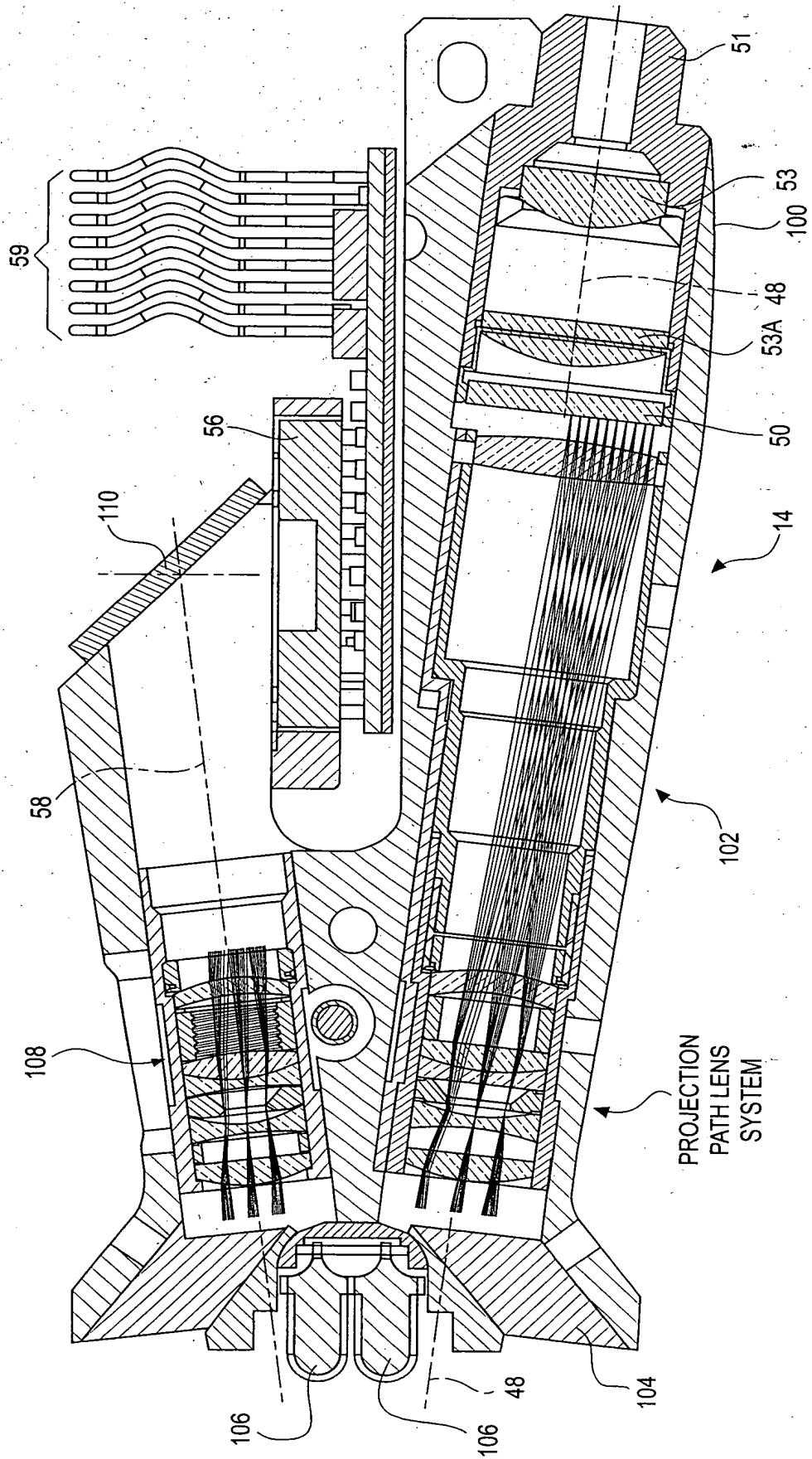


FIG. 8

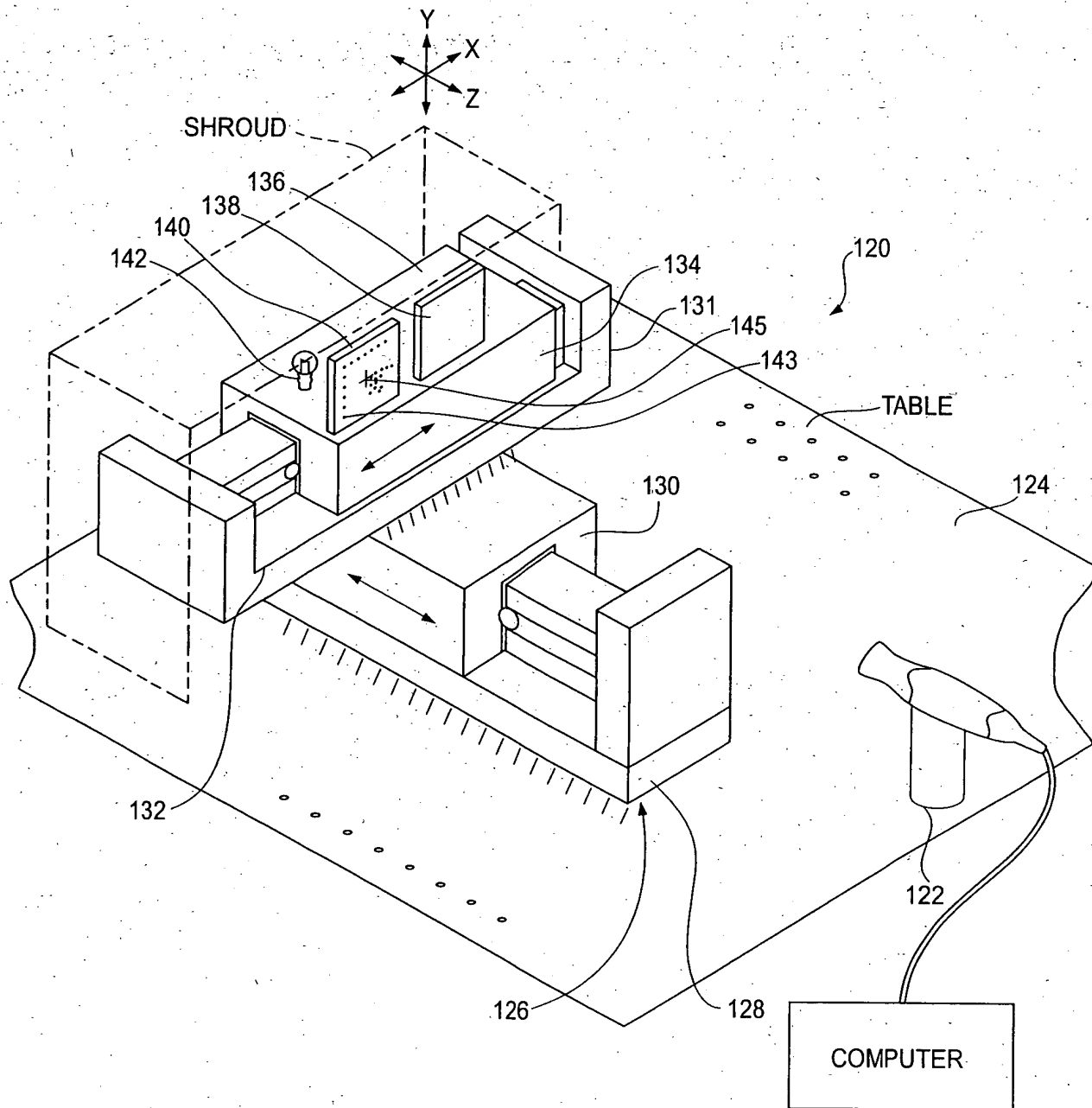
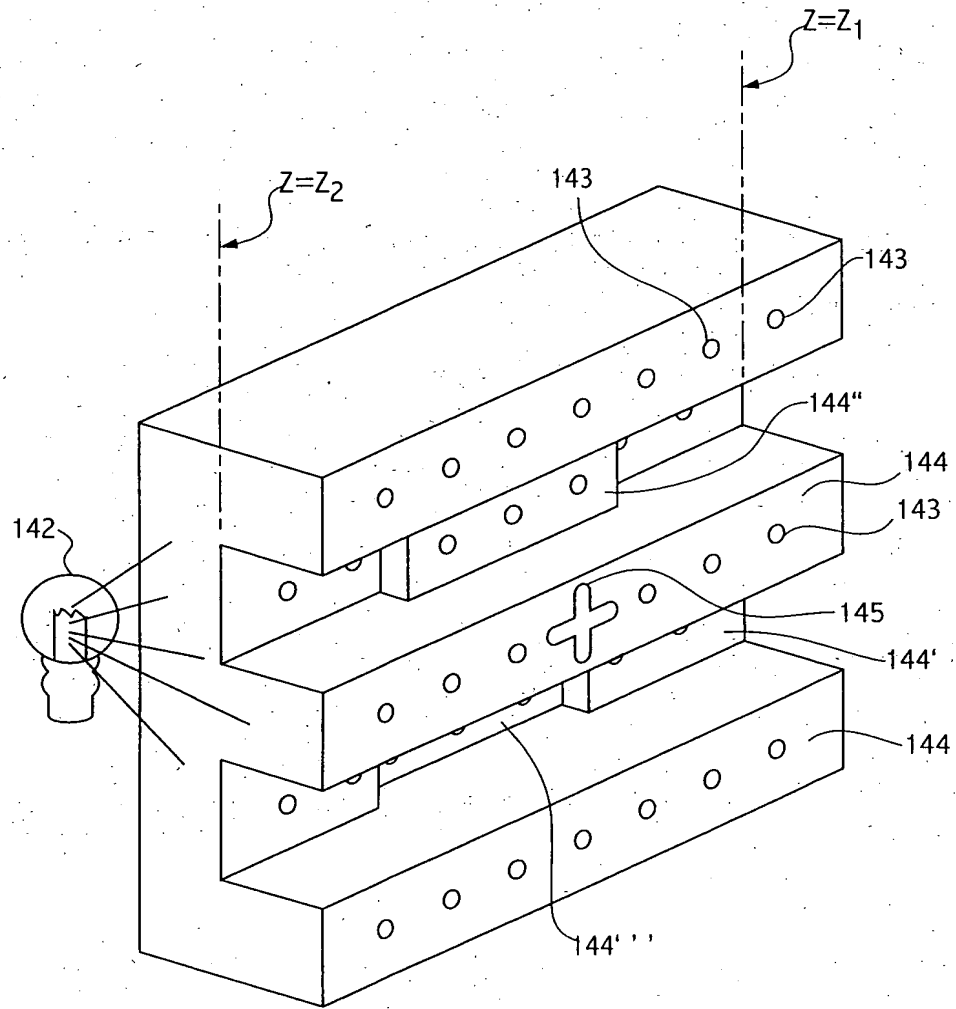


FIG. 8A



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FIG. 9

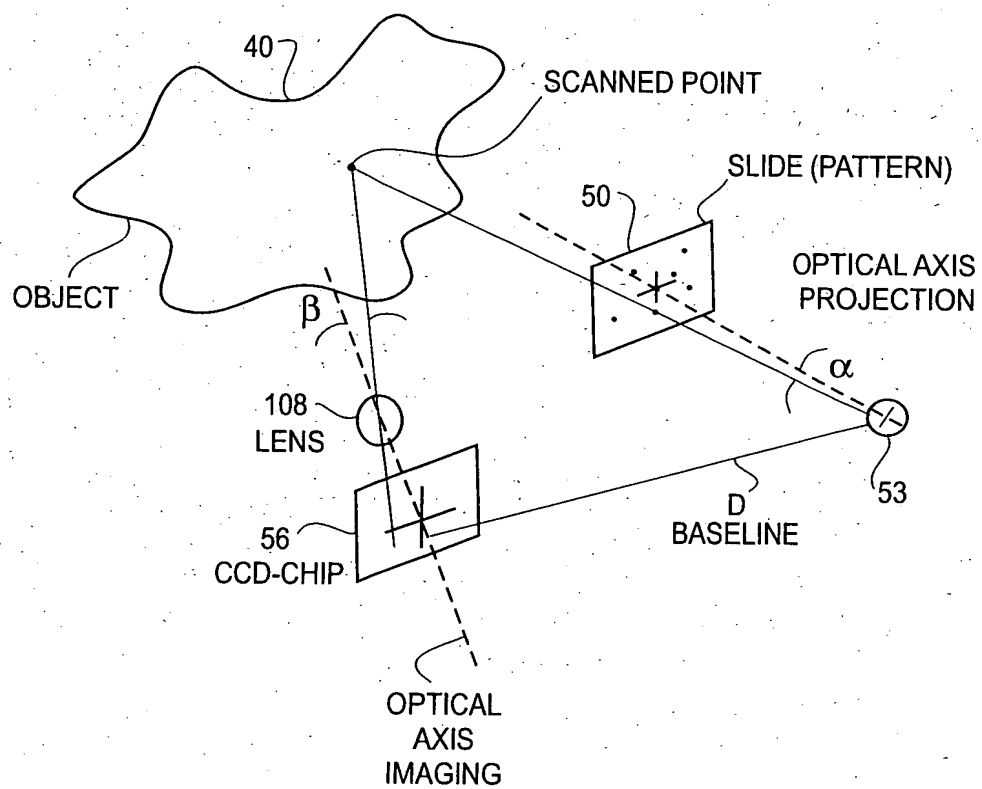


FIG. 9A

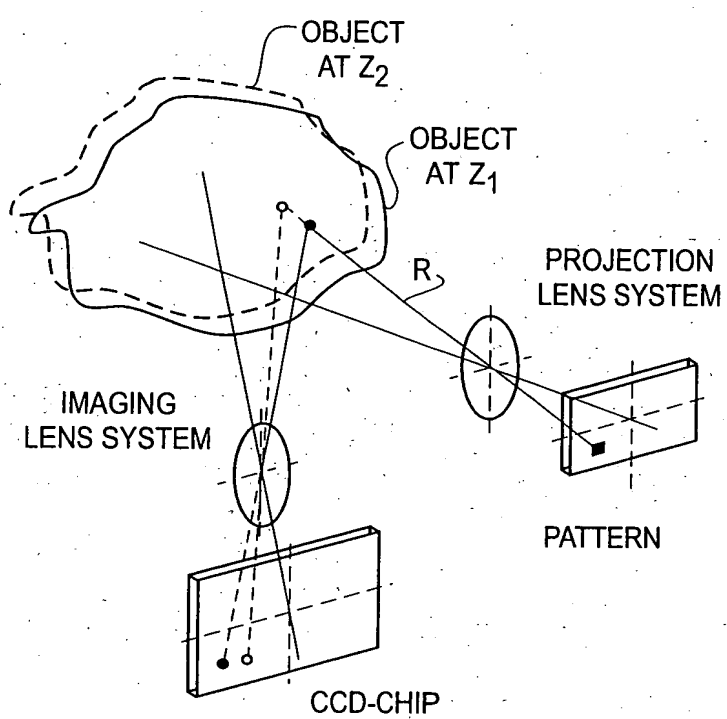


FIG. 9B

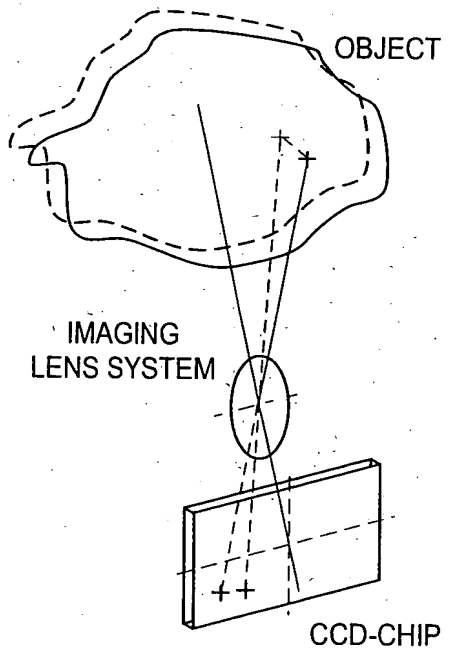
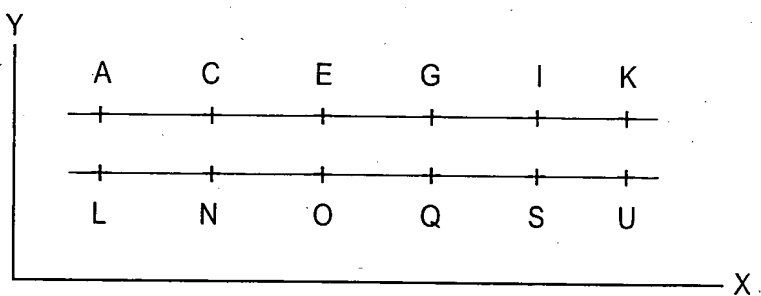


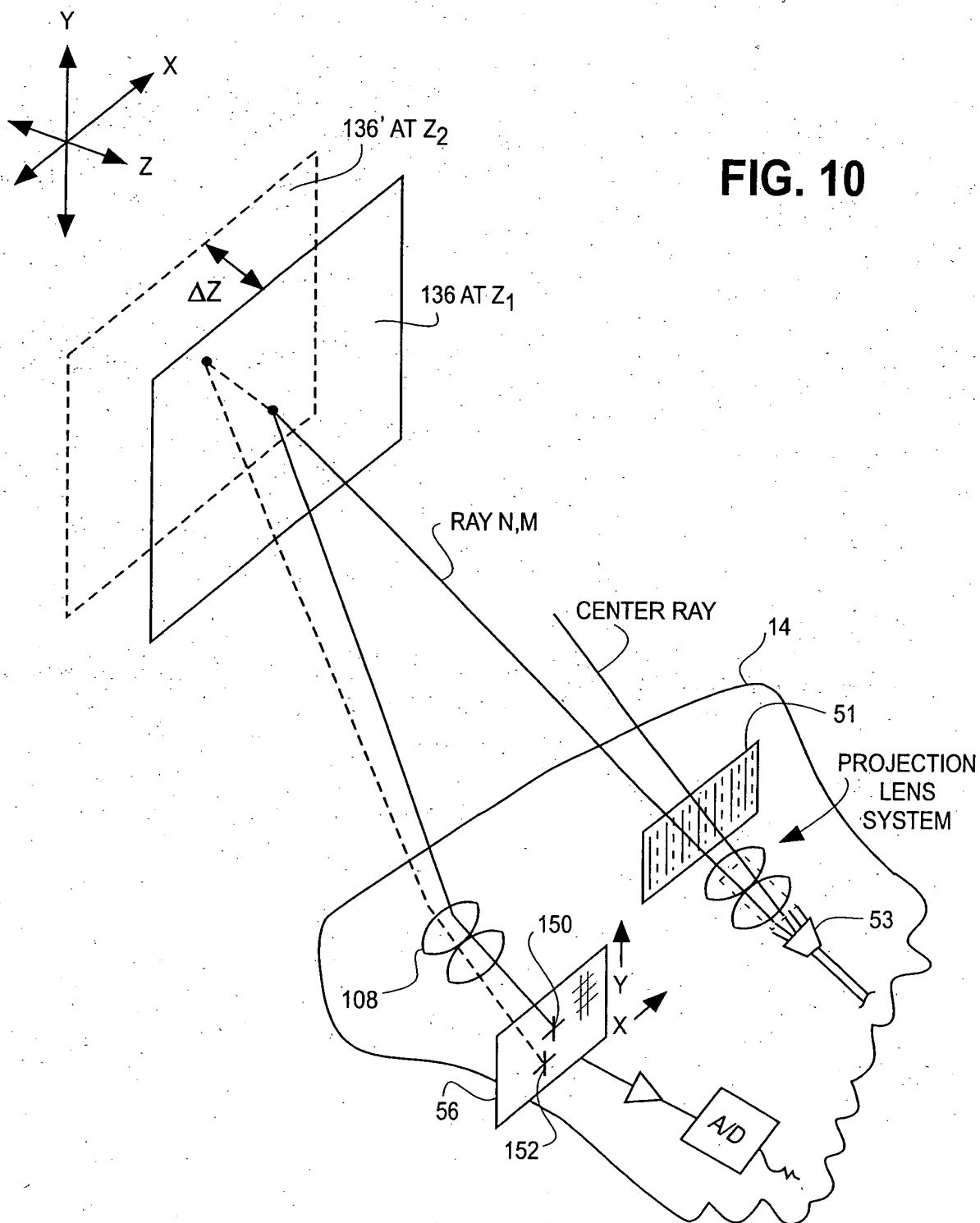
FIG. 9C



PIXEL COORDINATES FOR PORTIONS OF THE PATTERN ASSIGNED TO A CERTAIN Z-LEVEL

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FIG. 10



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FIG. 11

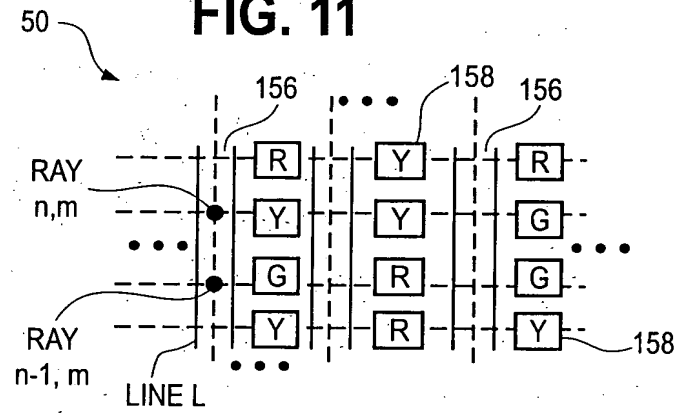


FIG. 12

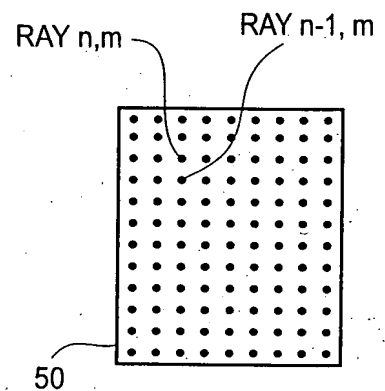


FIG. 13

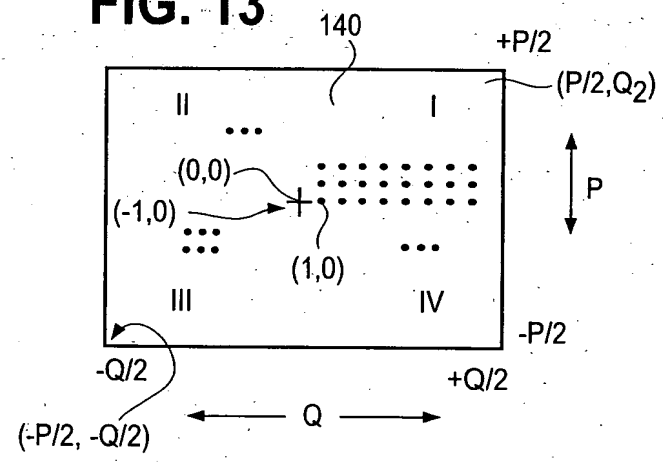


FIG. 14

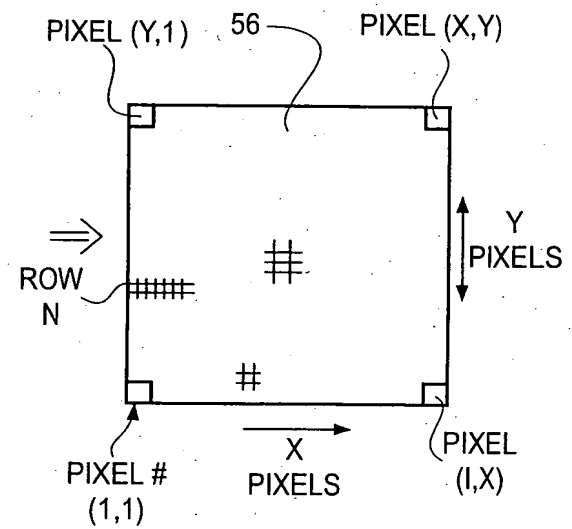


FIG. 15

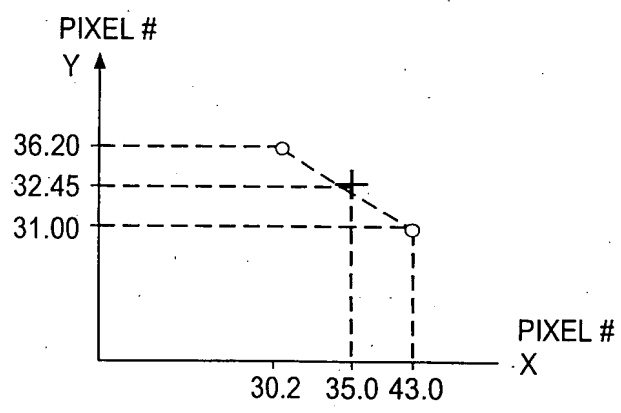
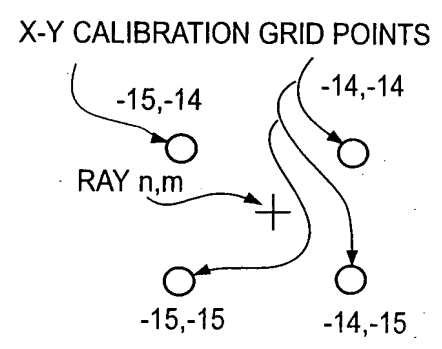


FIG. 16



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FIG. 17

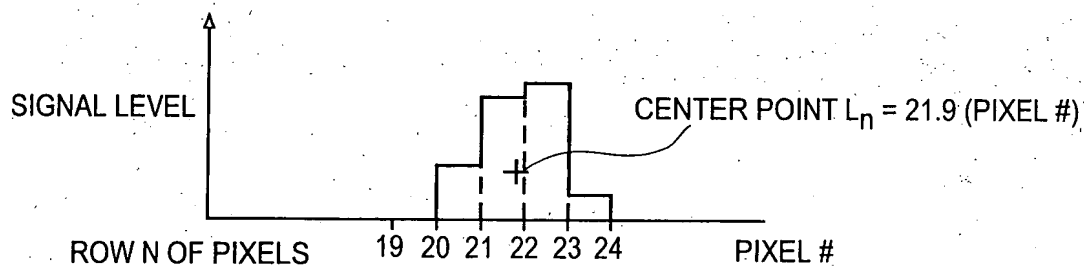


FIG. 18

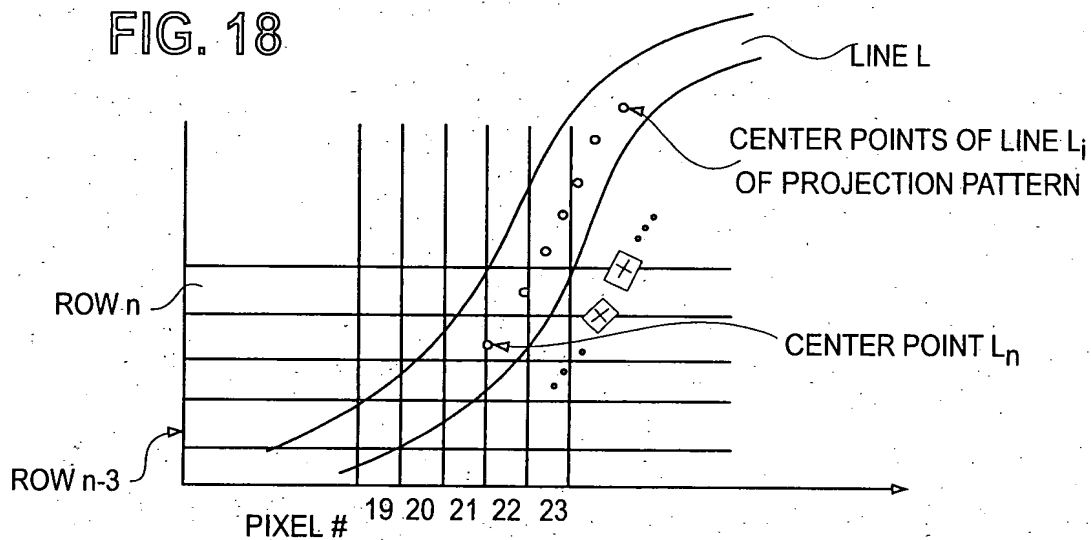
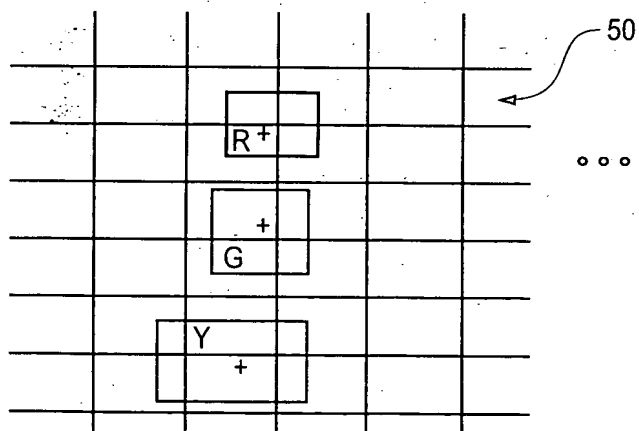


FIG. 19



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FIG. 20

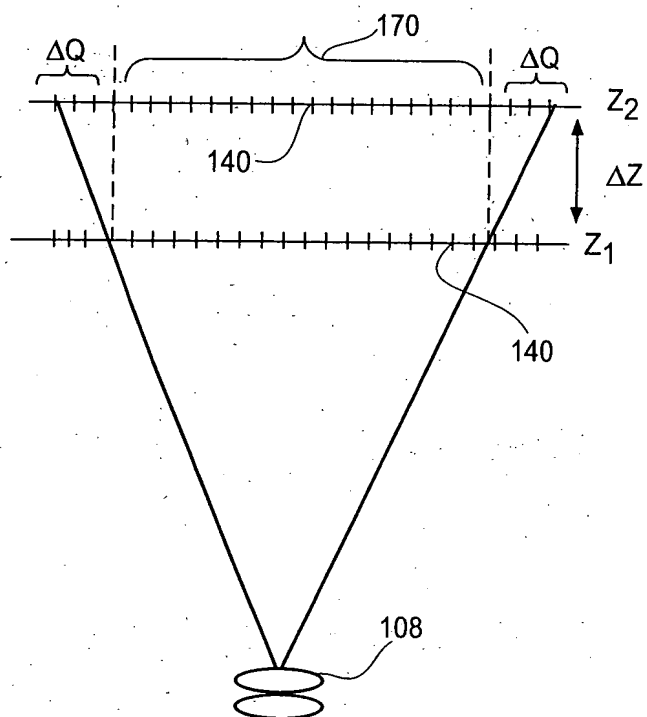


FIG. 21

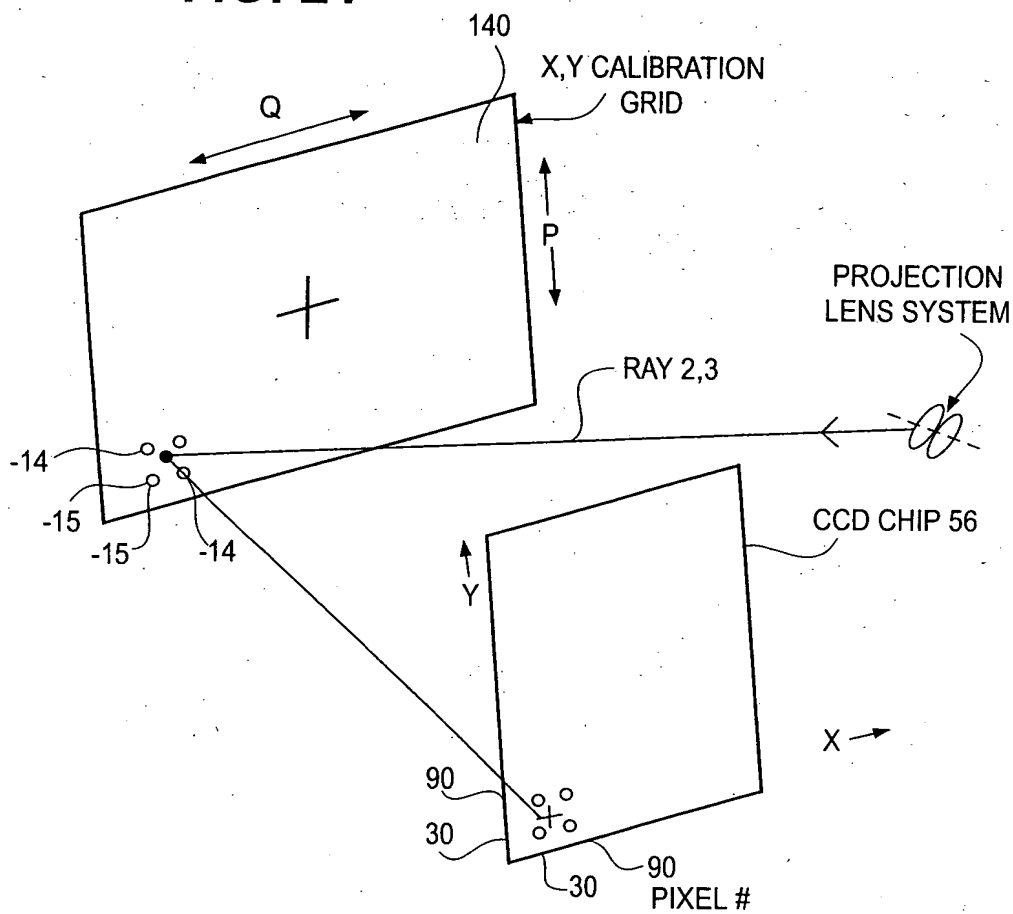


FIG. 22

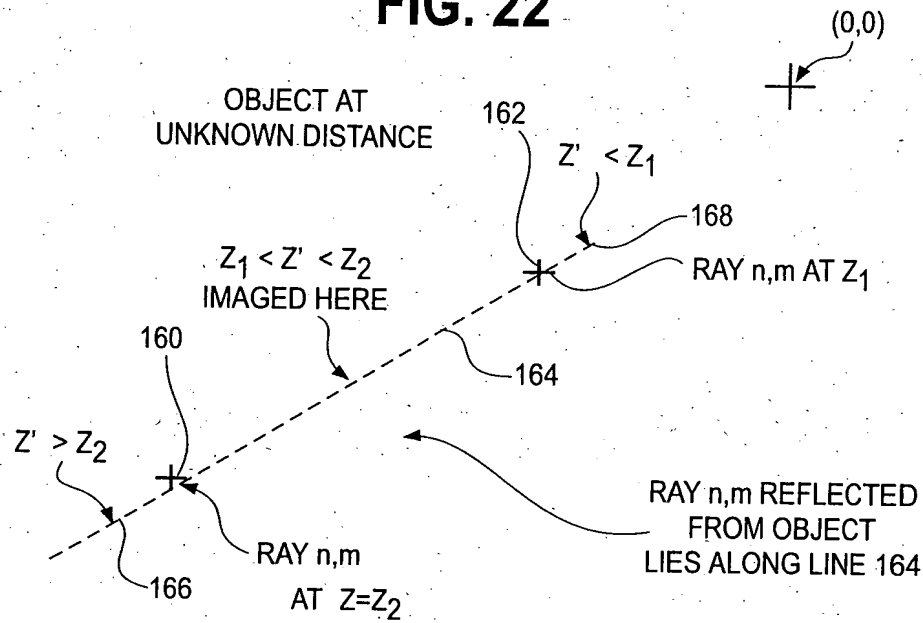
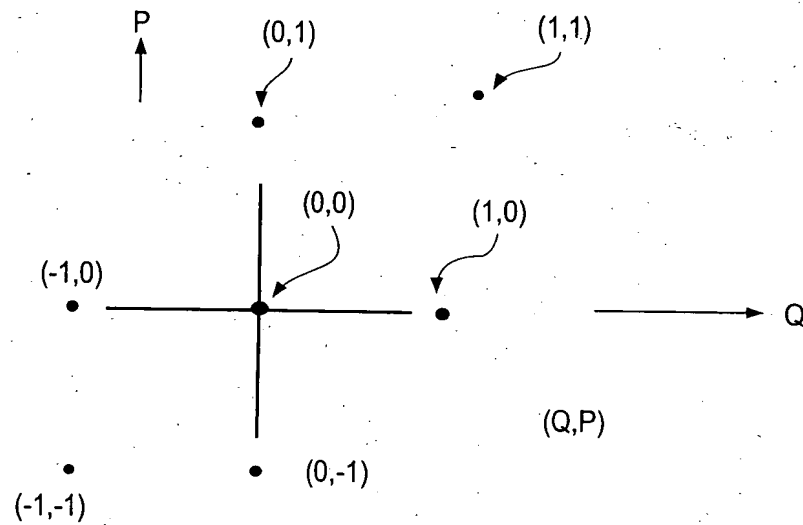


FIG. 23





24
G.
E

 $\text{CCD}_X, \text{CCD}_Y = \text{PIXEL \#}, \text{IN SUBPIXEL RESOLUTION}$

(BEFORE)

CALIBRATION TABLE #1

[illegible]

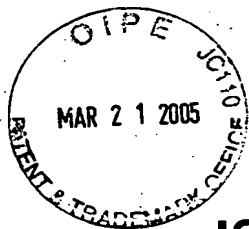


FIG. 25

CALIBRATION TABLE #2

(Q,P)

QUADRANT I

QUADRANT I	ROW 0							ROW 1				ROW + P/2				
	(0,0)	(1,0)	(2,0)	(3,0)	...	(Q/2 - ΔQ,0)	...	(Q/210)	(0,1)	(1,1)	(2,1)	...	(0, P/2)	(1, P/2)	...	(Q/2, P/2)
Z ₁	CCDX 640.1	700.2	760.6	820.5	...	...	...	—	640.1	700.2	...	...	...	...	...	1,279.5
	CCDY 640.1	640.1	640.3	640.4		...	...	—	701.2	701.5	...	...	...	...	...	1,279.4
Z ₂	CCDX 640.2	680.3	741.2	801.6		...	...	1,279.5	...	681.2	...	...	...	...	...	1,256.4
	CCDY 640.2	640.3	640.1	640.1		...	...	640.2	...	680.9	...	...	...	...	...	1,251.5

QUADRANT II

ROW

ROW 1

ROW + P/2

	(-1,0)	(-2,0)	(-3,0)	(-4,0)	...	(-Q/2 - ΔQ,0)	...	(-Q/210)	(-1,1)	(-2,1)	(-3,1)	...	(-1, P/2)	(-2, P/2)	...	(-Q/2, P/2)
Z ₁	CCDX															
	CCDY															
Z ₂	CCDX															
	CCDY															

QUADRANT III

Z₁ CCDX (-1,-1) (-2,-1) ...

CCDY

Z₂ CCDX

CCDY

QUADRANT IV

Z₁ CCDX (0,-1) (1,-1) ...

CCDY

Z₂ CCDX

CCDY

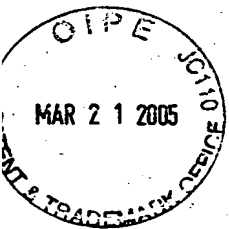


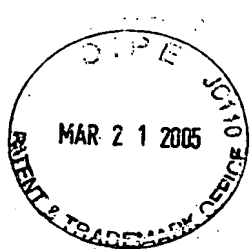
FIG. 26

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CCD_X, CCD_Y = PIXEL #, IN SUBPIXEL RESOLUTION

CALIBRATION TABLE #1 (AFTER)

		PATTERN							LINE 2							LINE N						
		ROW 1	ROW 2	ROW 3	ROW 4	•••	ROW M	ROW 1	ROW 2	ROW 3	ROW 4	•••	ROW M	ROW 1	ROW 2	•••	ROW M					
Z ₁	CCDX	1.0	1.1	1.5	2.1		•••	27.1	29.5	30.2	37.1											
	MM DIST.									-14.6												
	CCDY	10.2	20.4	32.8	44.5			11.5	21.6	36.2	44											
	MM DIST.									-14.4												
Z ₂	CCDX	3.9	4.5	6.8	12.2			34.0	41.1	43.0	46											
	MM DIST.									-14.8												
	CCDY	12.1	21.5	30.4	46.3			13.2	21.8	31.0	48.2											
	MM DIST.									-15.8												



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Fig. 27

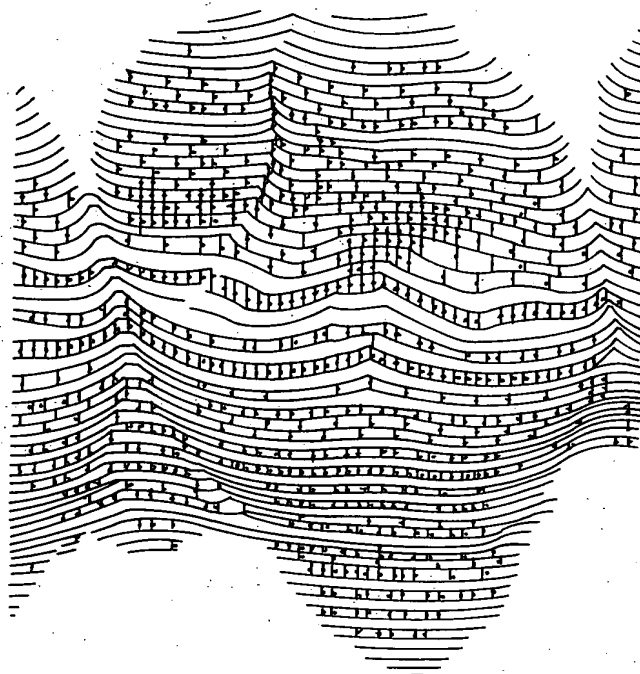
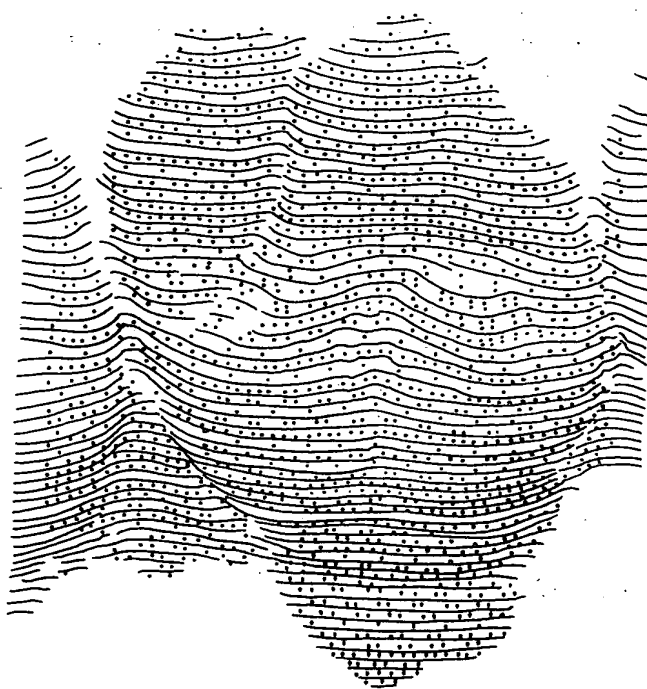
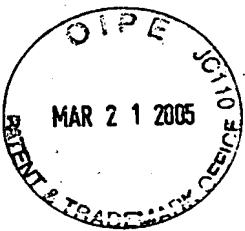


Fig. 28





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Fig. 29



Fig. 30

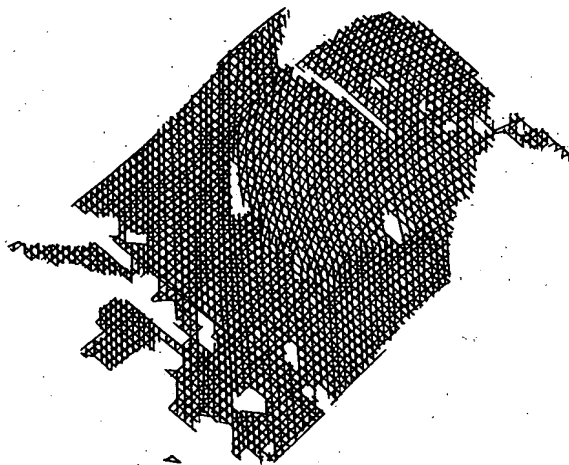


Fig. 31



Fig. 32





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Fig. 33

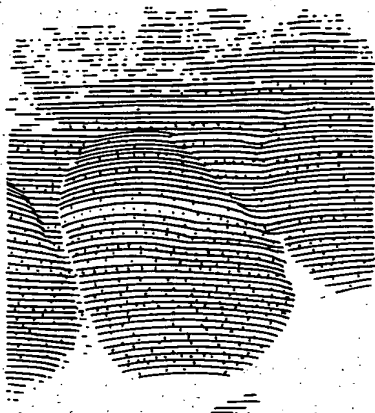


Fig. 34

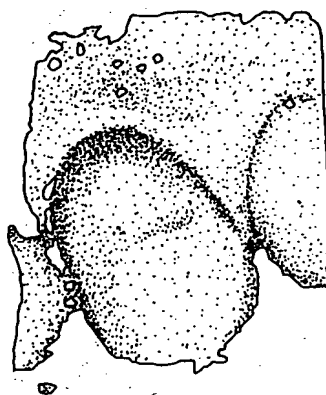
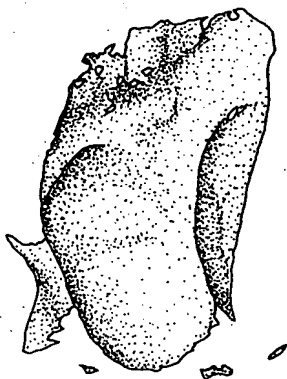
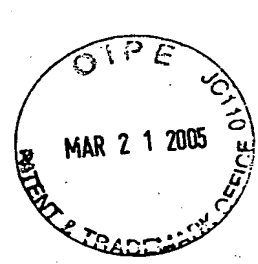


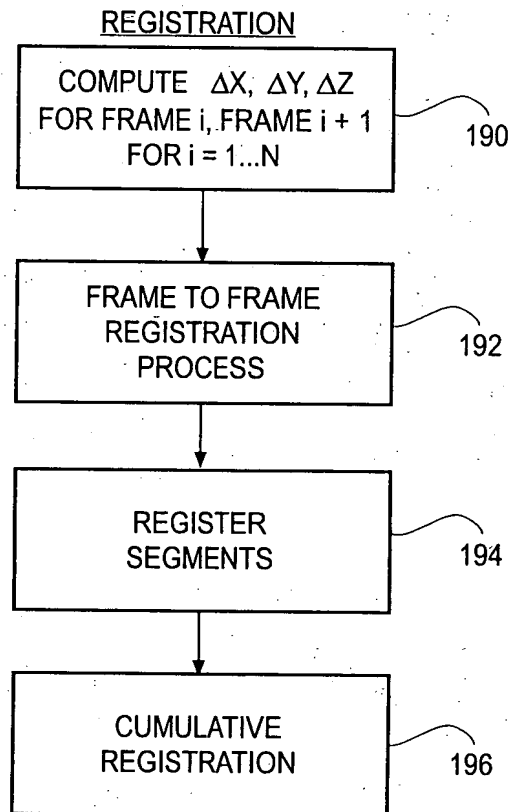
Fig. 35





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FIG. 36



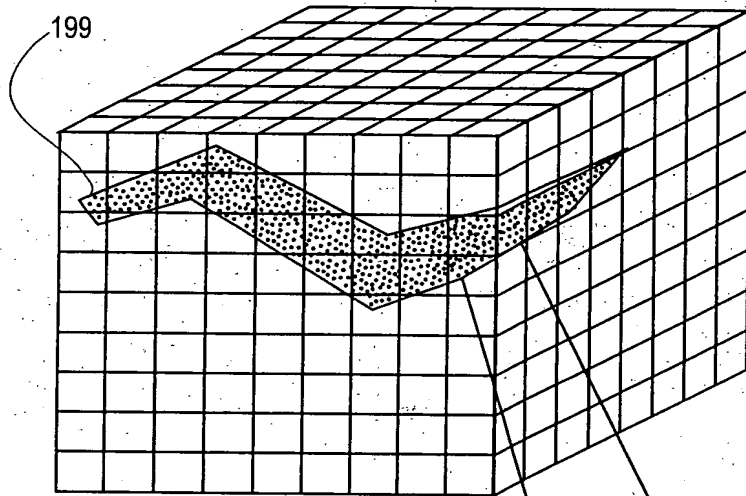
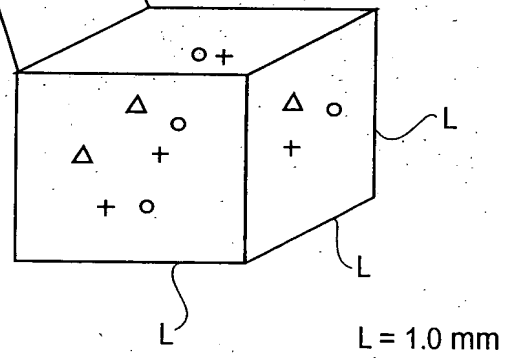


FIG. 37A

FIG. 37B



Δ = POINTS OF FRAME i
 + = POINTS OF FRAME $i + 1$
 o = POINTS OF FRAME $i + 2$

FIG. 37C

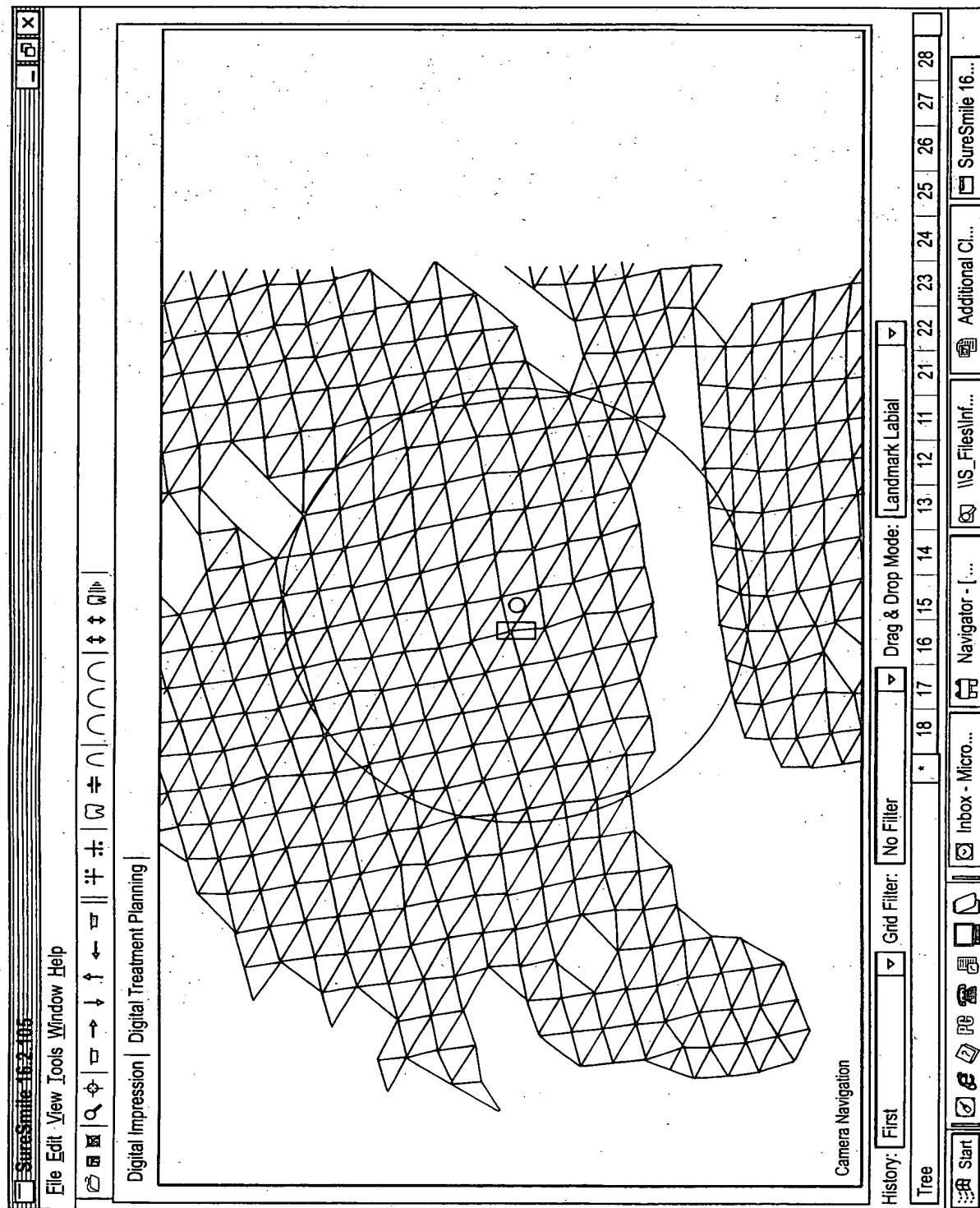
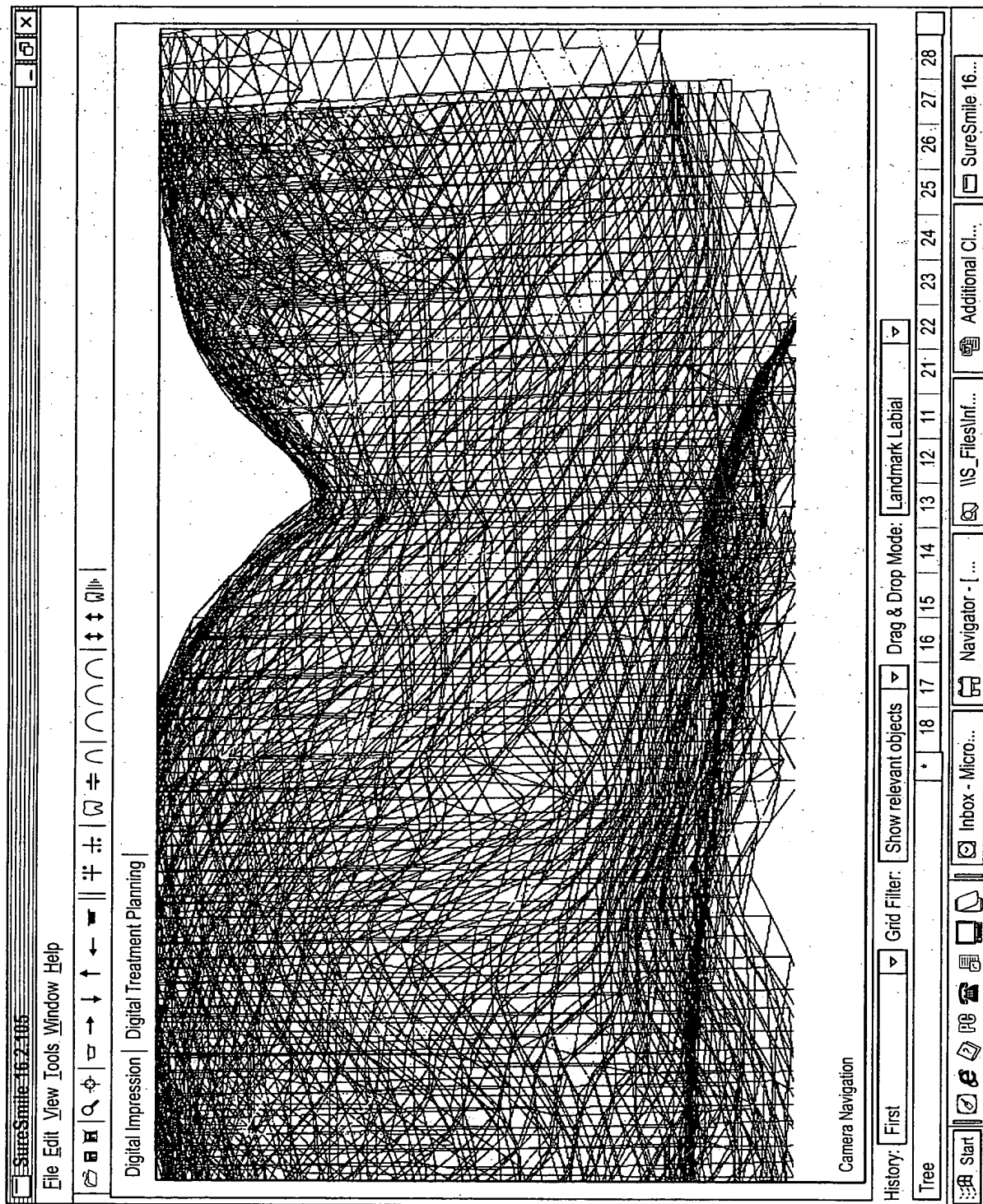
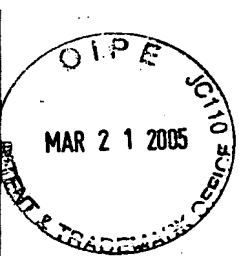


FIG. 37D



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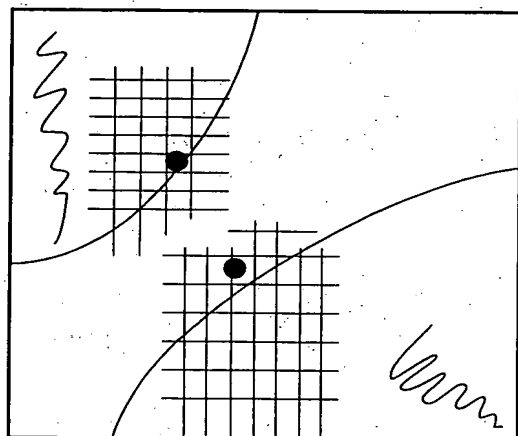


FIG. 38A

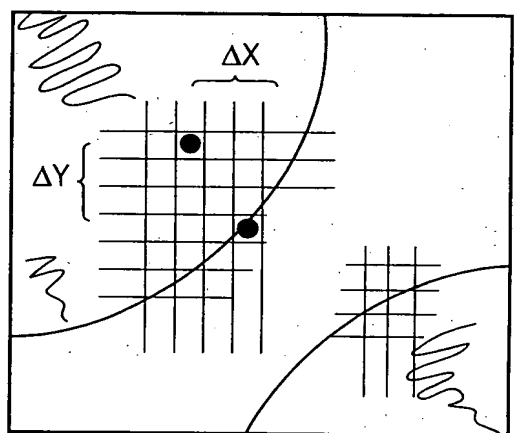


FIG. 38B

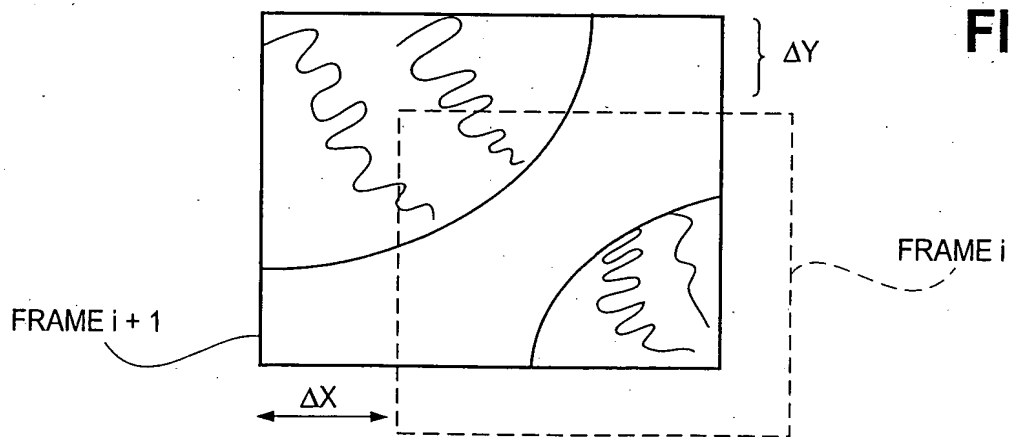


FIG. 38C

FIG. 39A

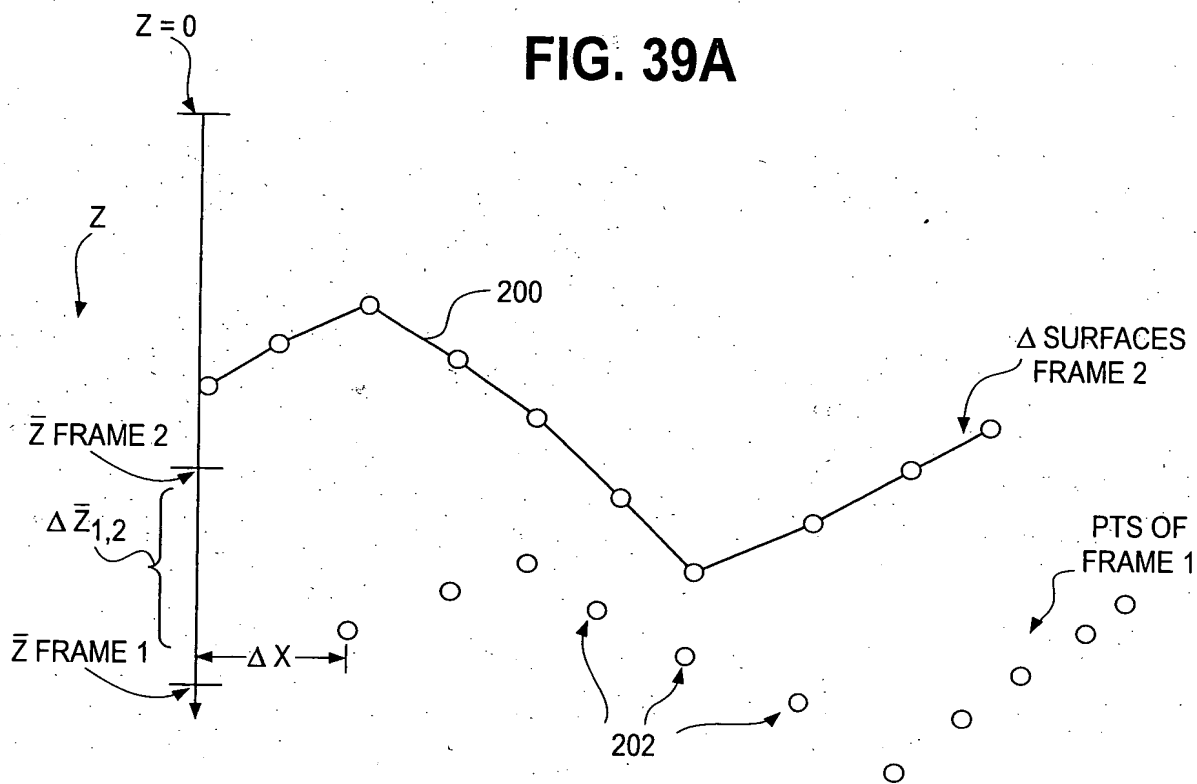
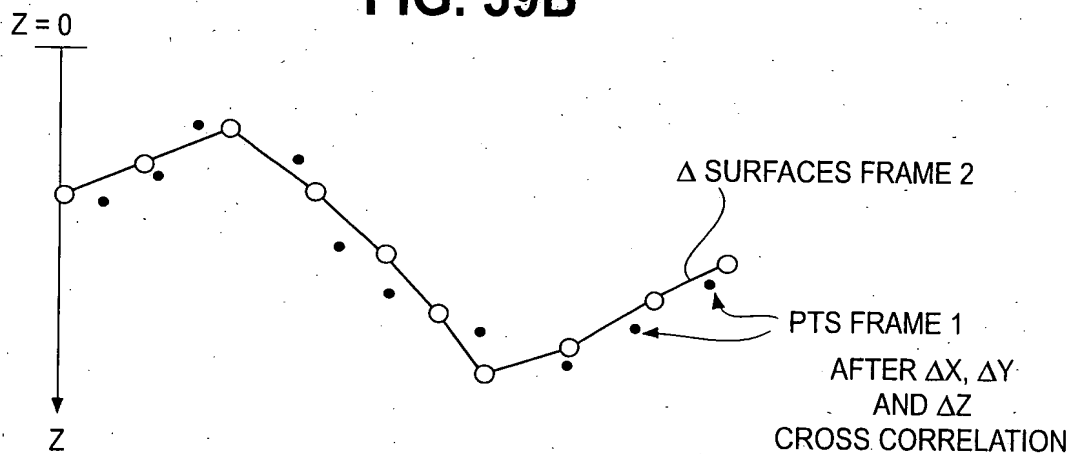
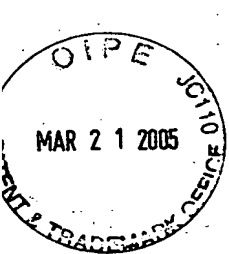


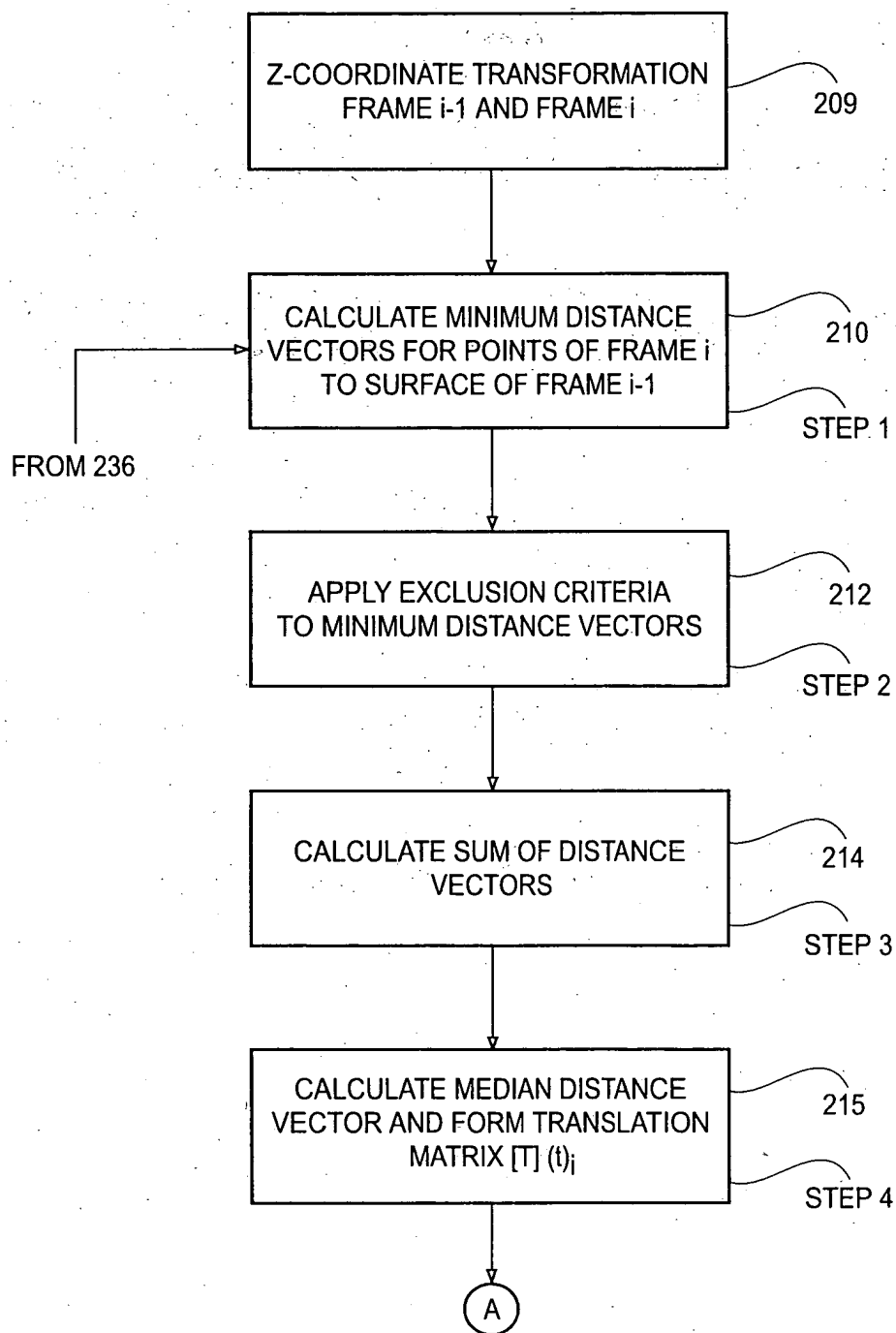
FIG. 39B

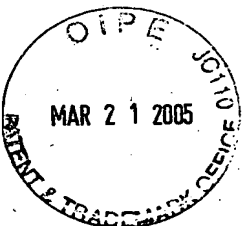




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FIG. 40A





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FIG. 40B

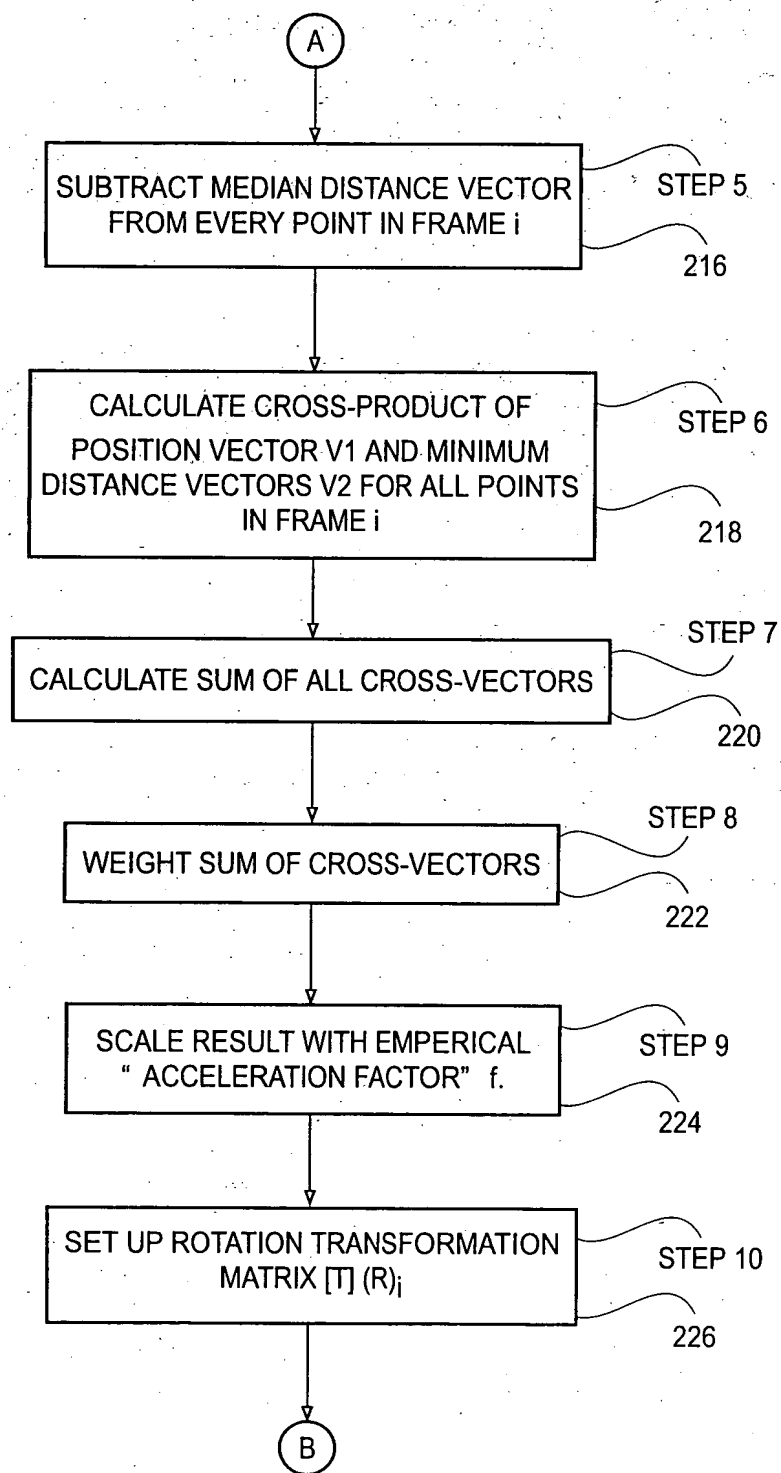
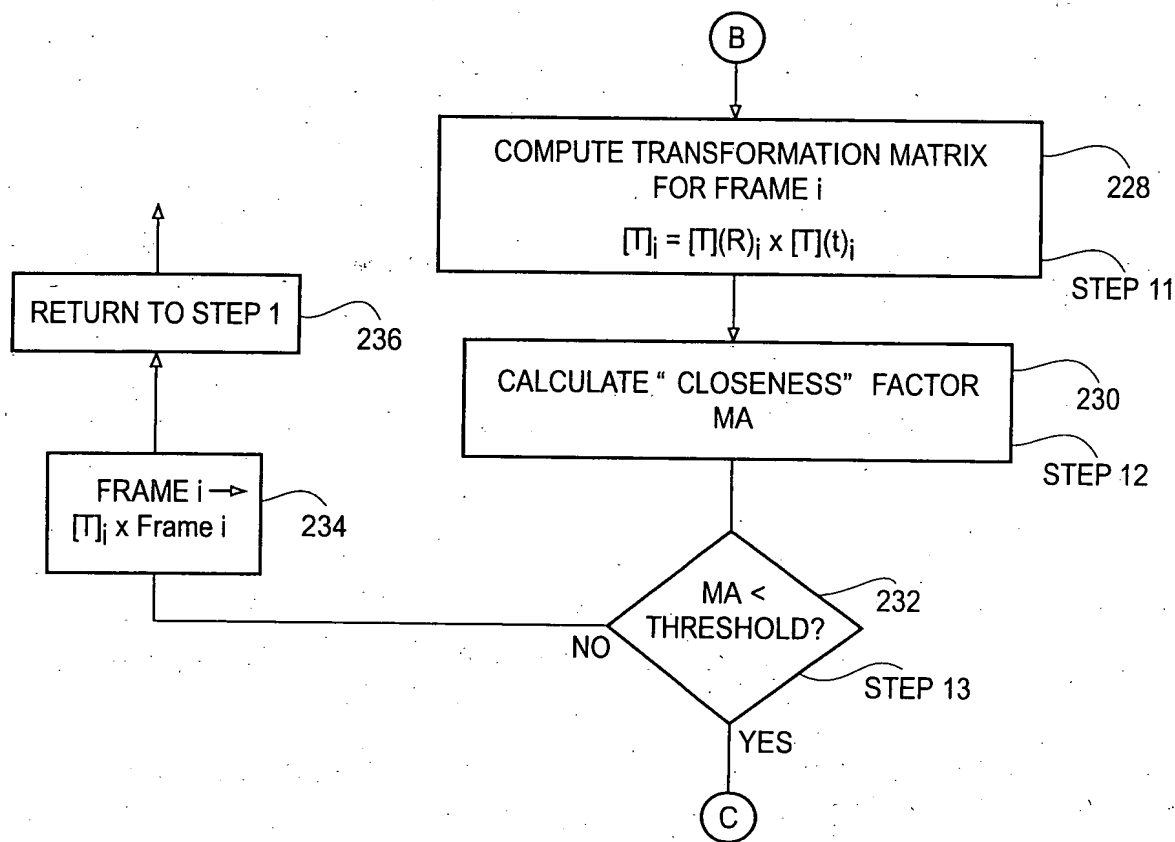


FIG. 40C





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FIG. 40D

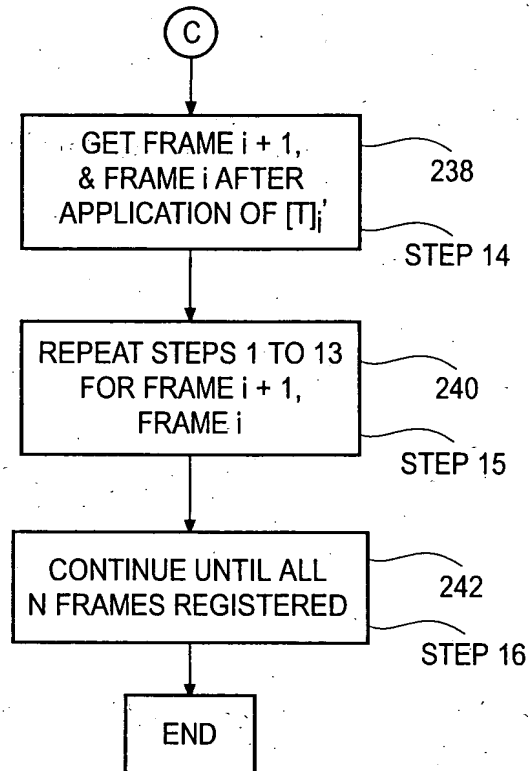


FIG. 41

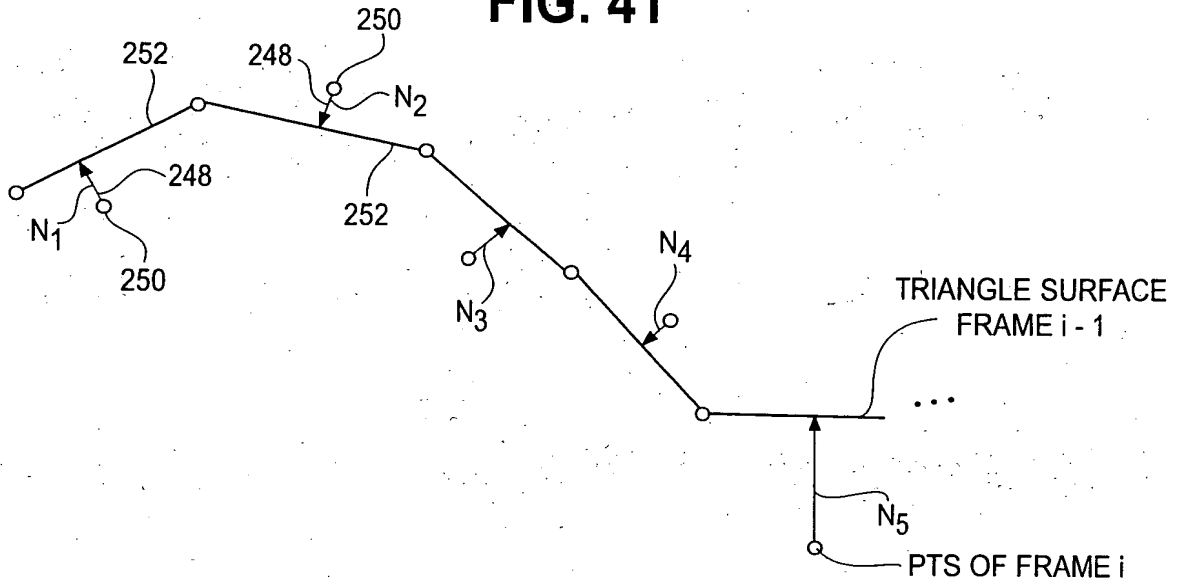


FIG. 42

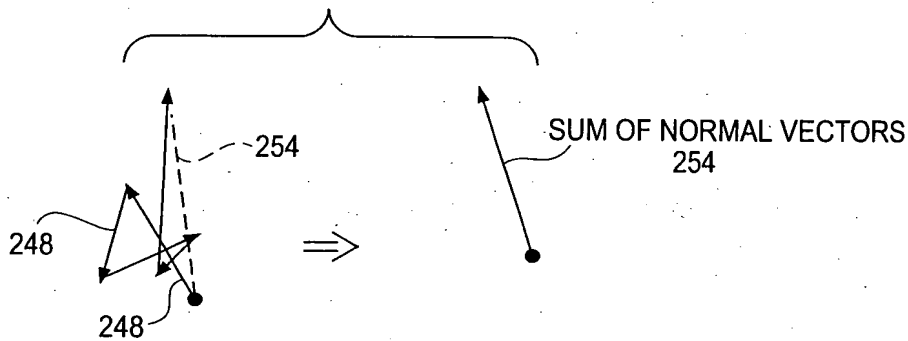


FIG. 43

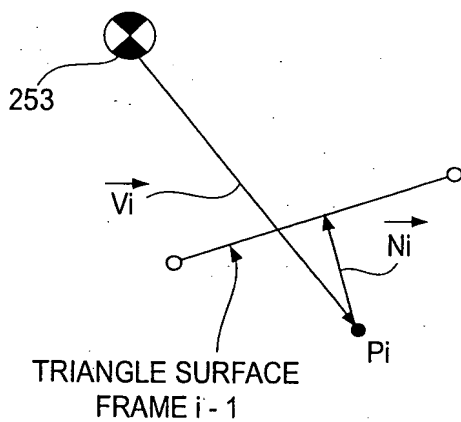
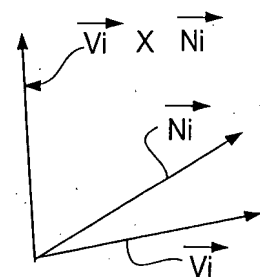
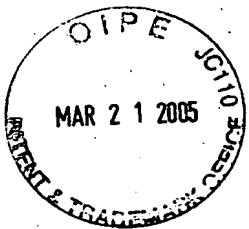


FIG. 44





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FIG. 45

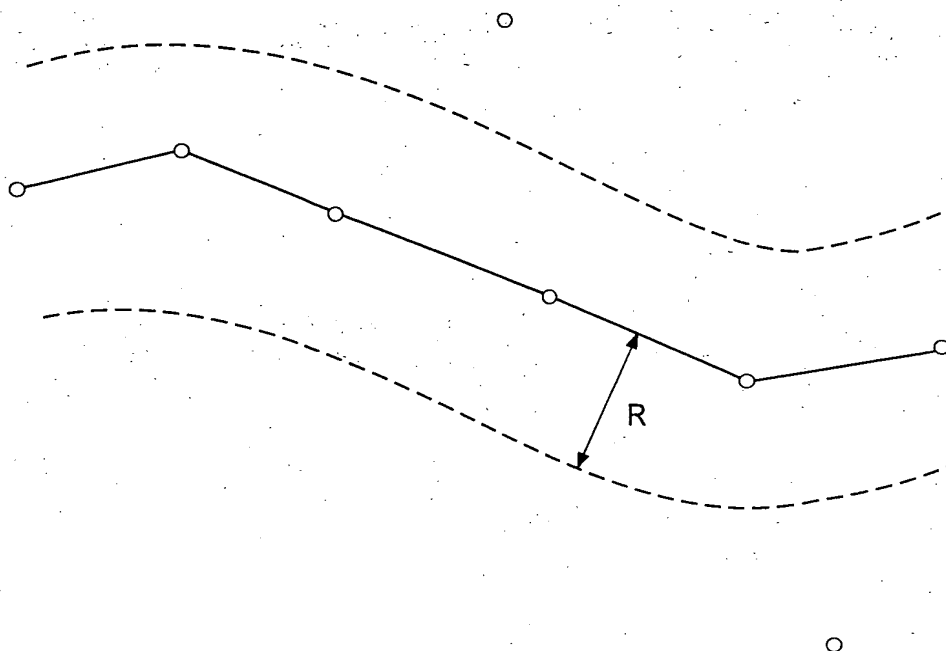


FIG. 46

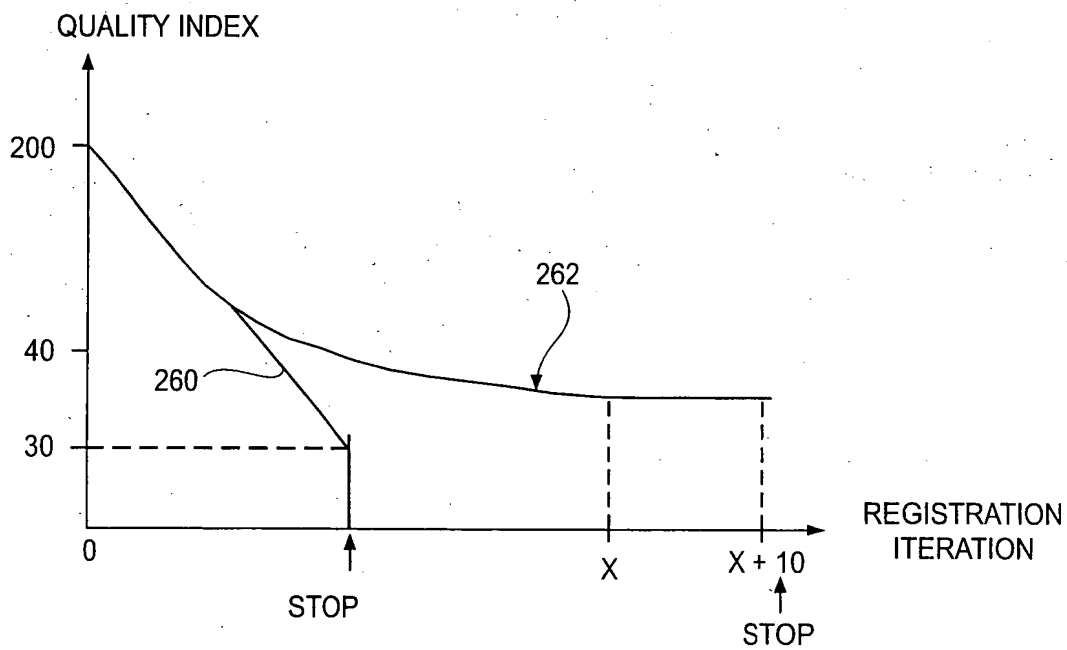


FIG. 47A

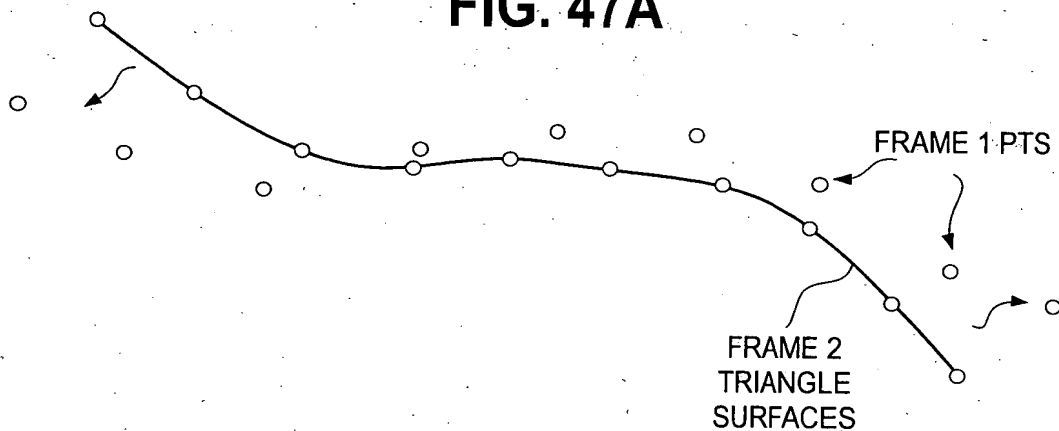
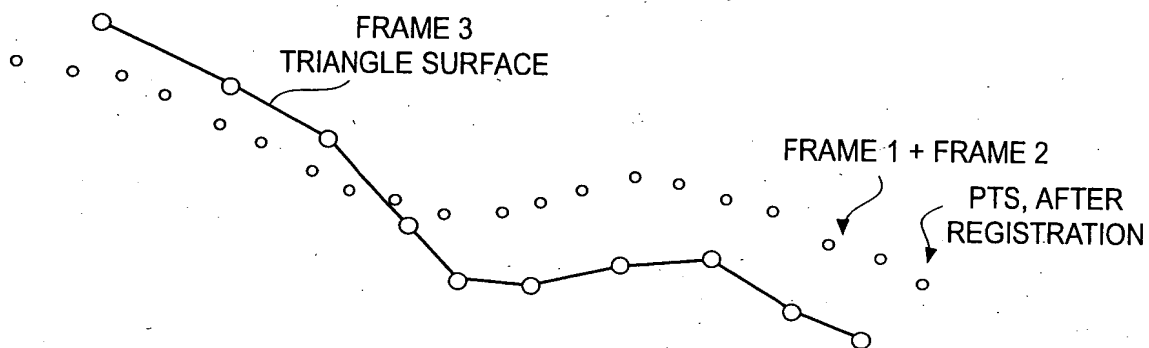


FIG. 47B

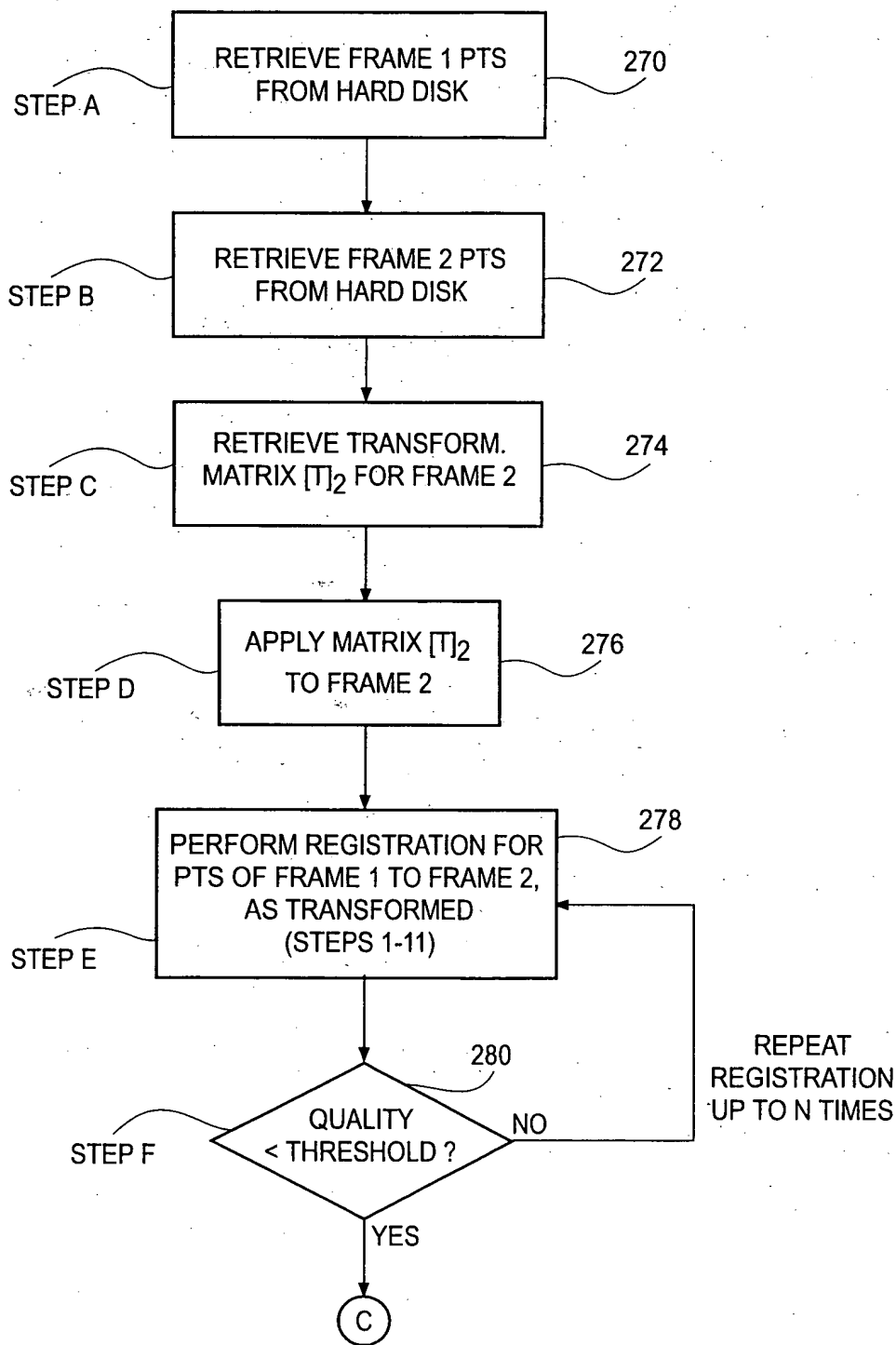


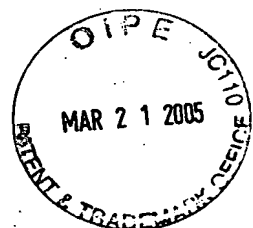


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FIG. 48A

CUMULATIVE REGISTRATION





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FIG. 48B

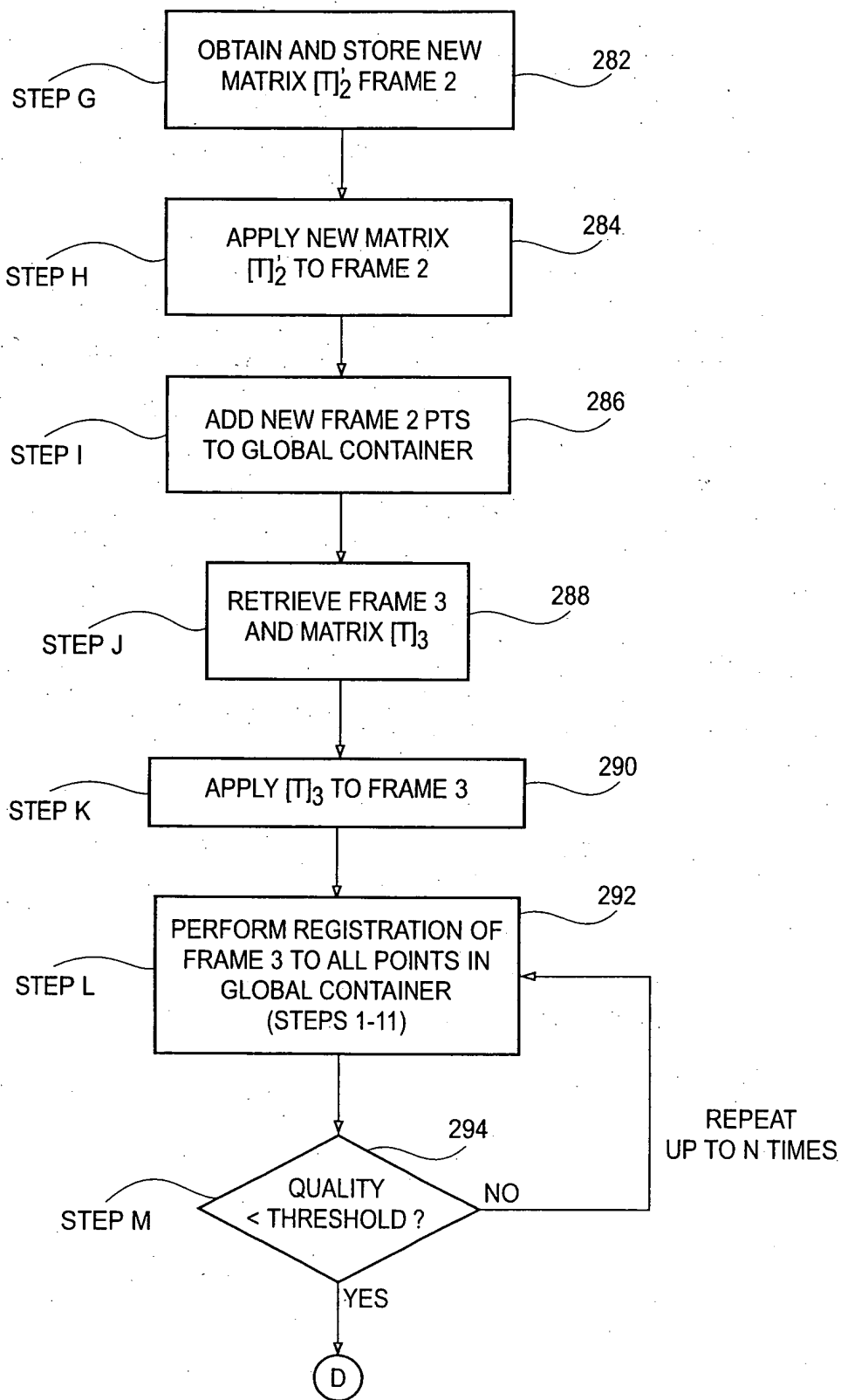
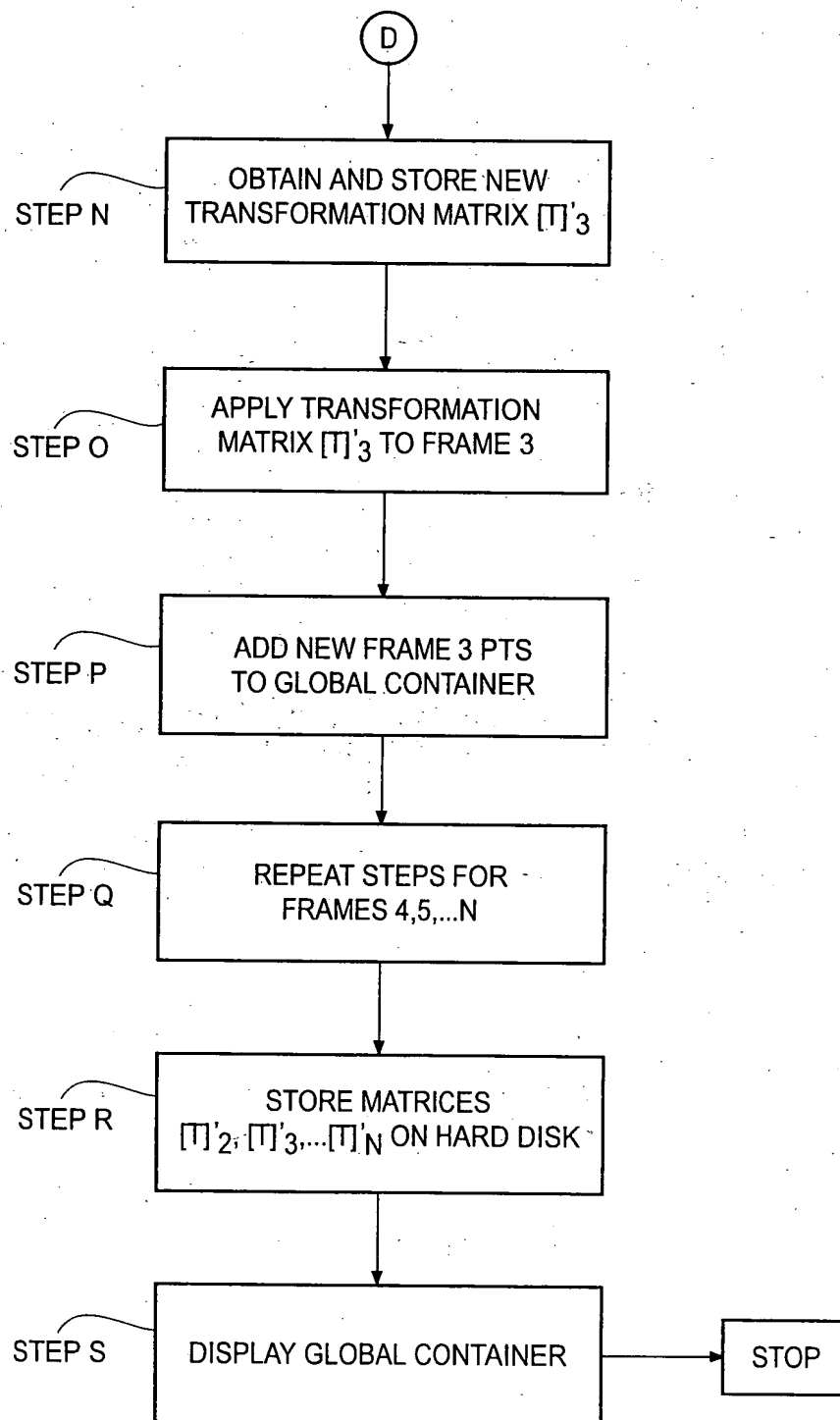
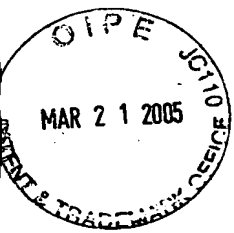


FIG. 48C





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FIG. 49

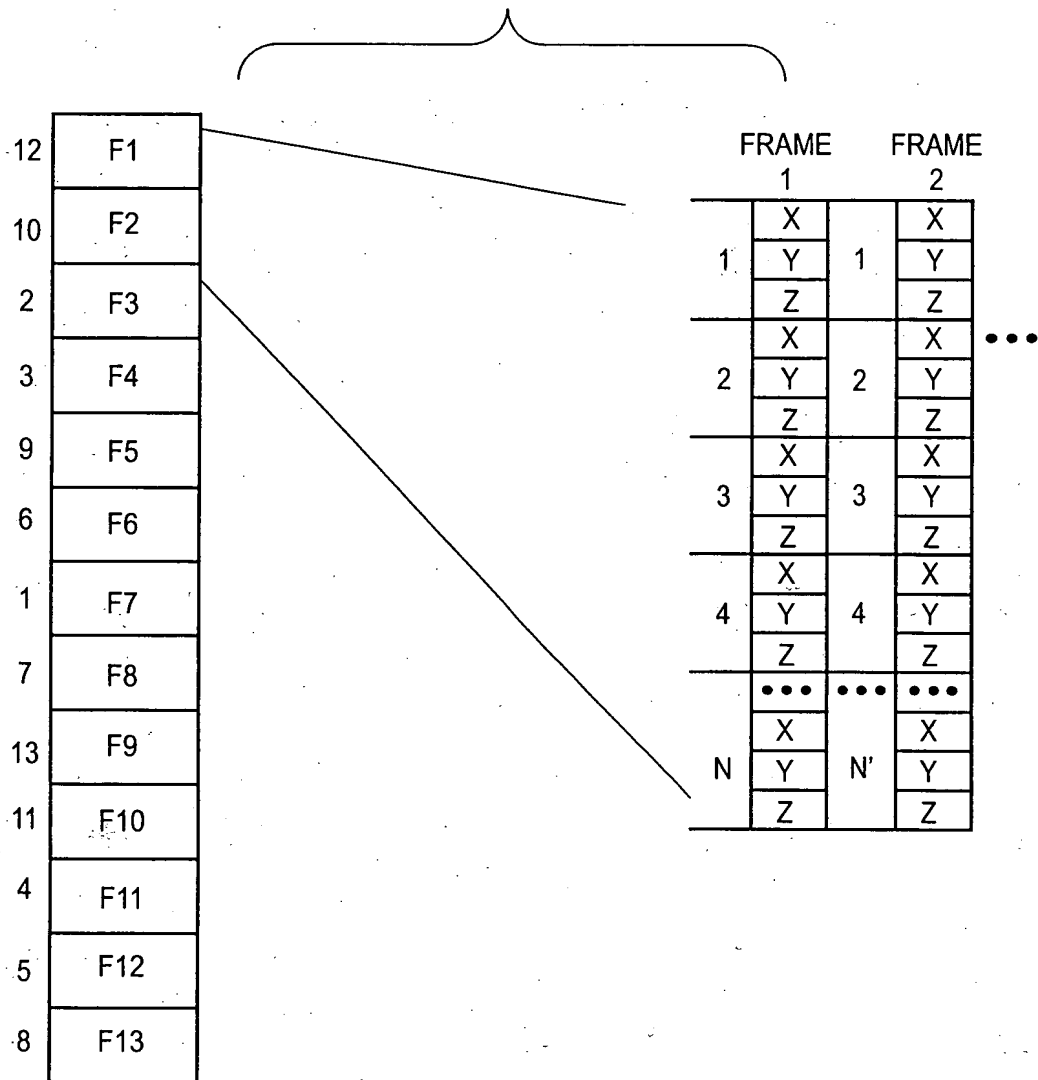


FIG. 50

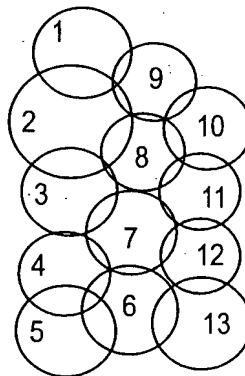


FIG. 51

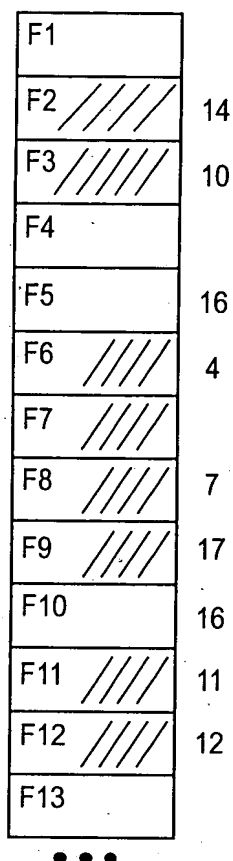


FIG. 52

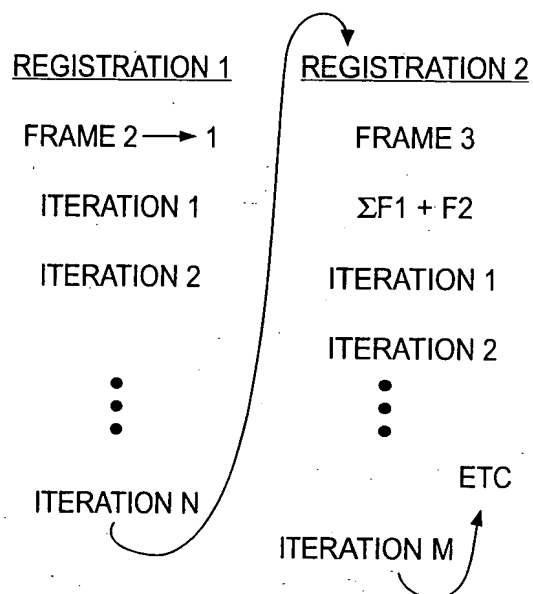


FIG. 53

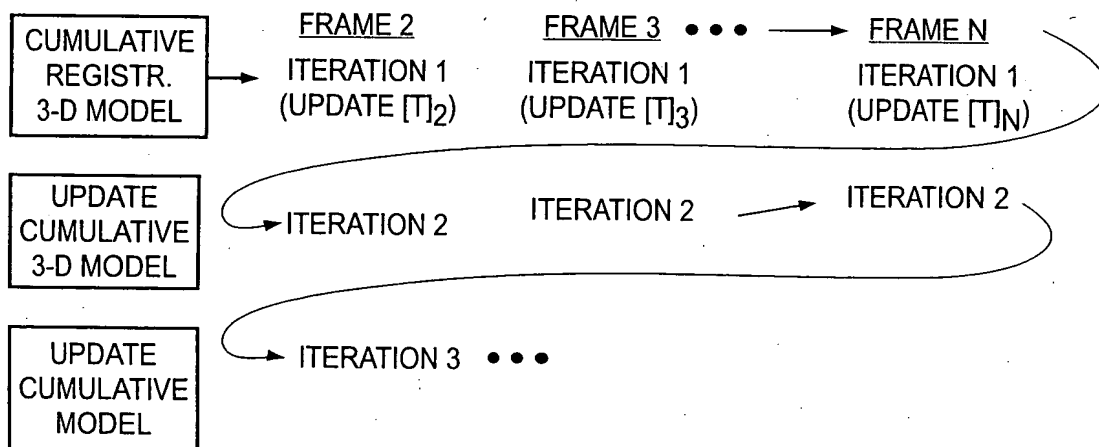


FIG. 54

☒ Single

☐ Cumulative

X	Y	Z
0.00	0.00	0.00
3.00	0.00	0.00
-3.00	0.00	0.00
0.00	3.00	0.00
0.00	-3.00	0.00

Registration (raw)

Distance limit (SYX)

Stationary count

Radius (SYX)

Convergence factor

Number of points to register

Accelerate factor

Registration (raw + fine)

Maximal iteration count

Overlap size

Minimum quote of active points (0..1)

Maximal triangle size (larger triangles are treated as gaps)

Maximal edge length (longer edges have no attraction)

Maximal count of unsuccessful files new segment is started when exceeded

Form factor: Proportion of point distance and element size (≥ 0)

Registration (line)

Distance limit (SYX)

Final distance

Stationary count

Radius (SYX)

Convergence factor

Number of points to register

Accelerate factor

general

Count of SYX surfaces for animation (0= off) Cell size

☒ Combine frames cumulative

☒ Combine segments cumulative

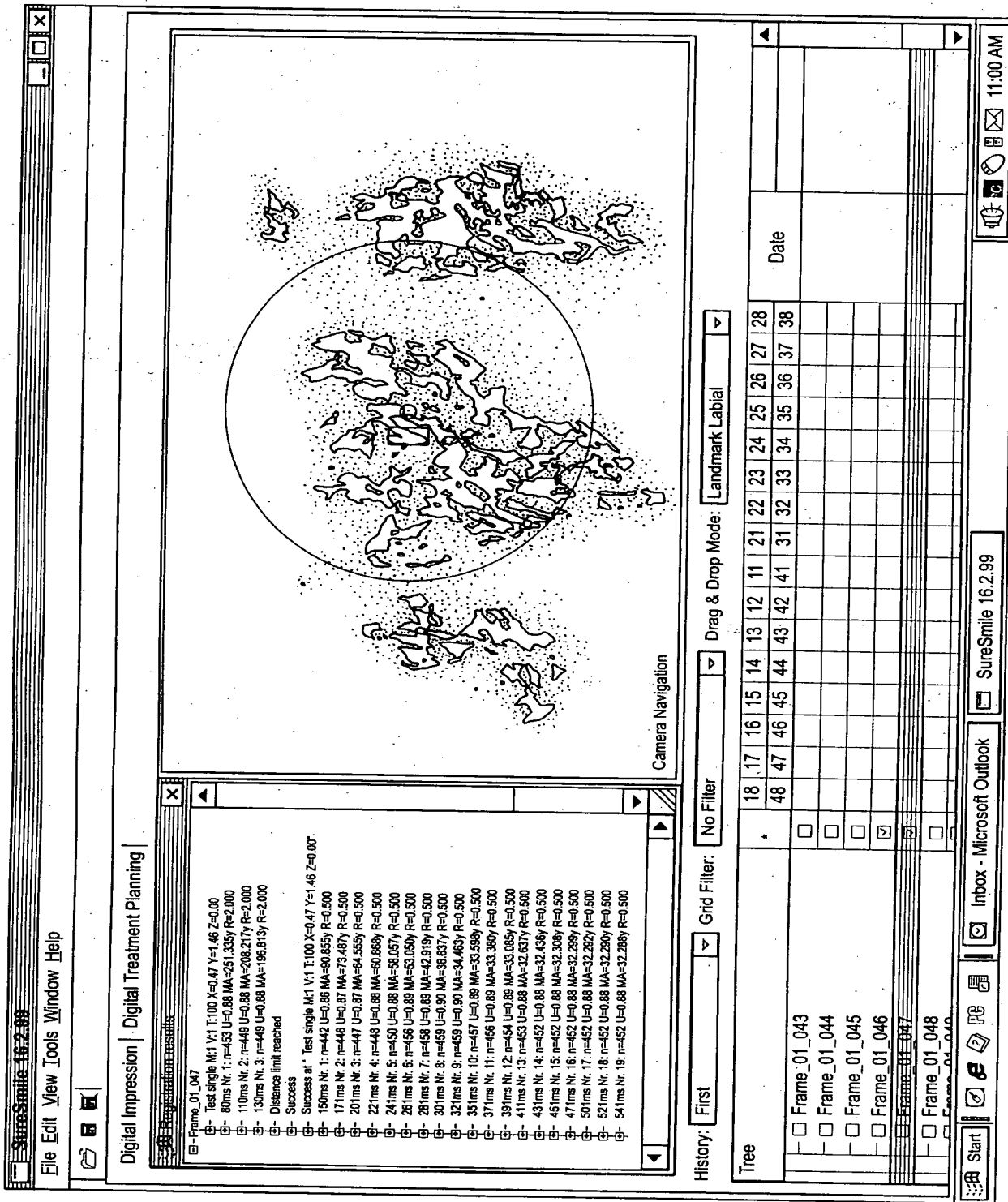
Merging

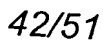
Radius of sphere inside which is to replace Minimal triangle plane size for closing gaps Minimal distance from point of base quantity

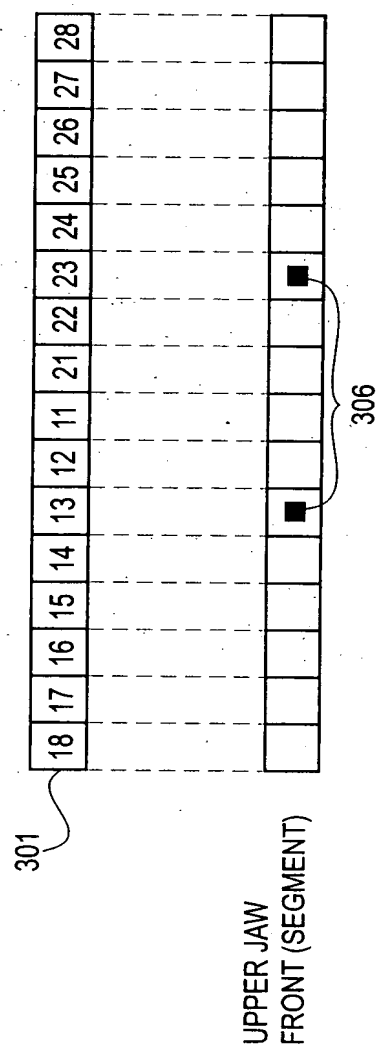
Maximal count of edge lines for closing gaps Maximal edge length for closing gaps Maximal distance from edge of base quantity

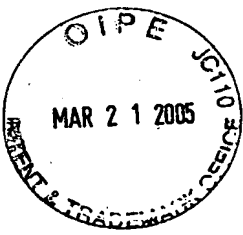


FIG. 55









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Fig. 58A

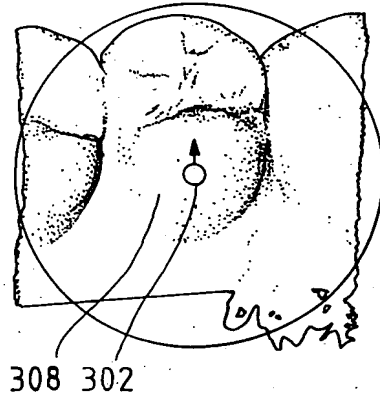


Fig. 58B

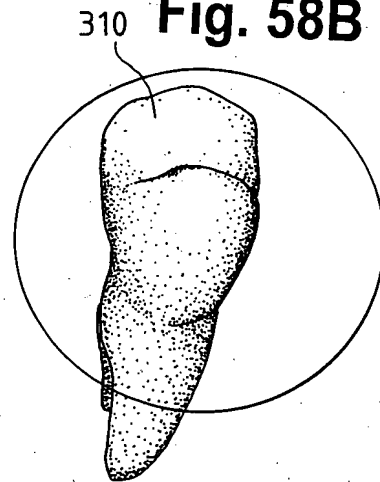


Fig. 58C

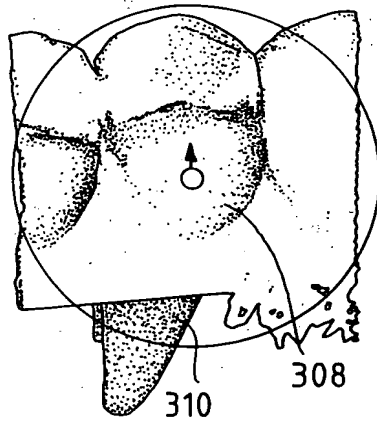


Fig. 58D

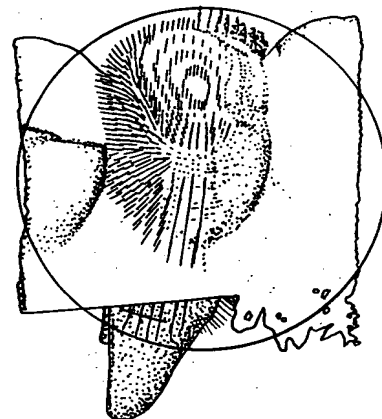


Fig. 58E

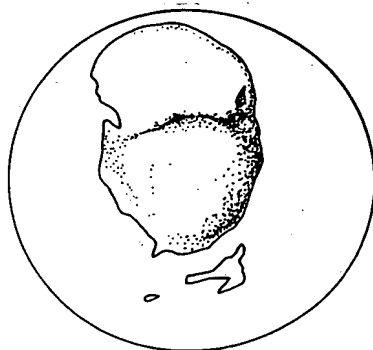


Fig. 58F

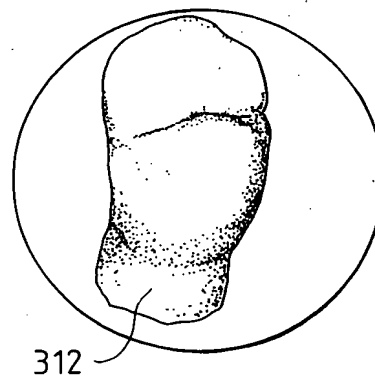


Fig. 59

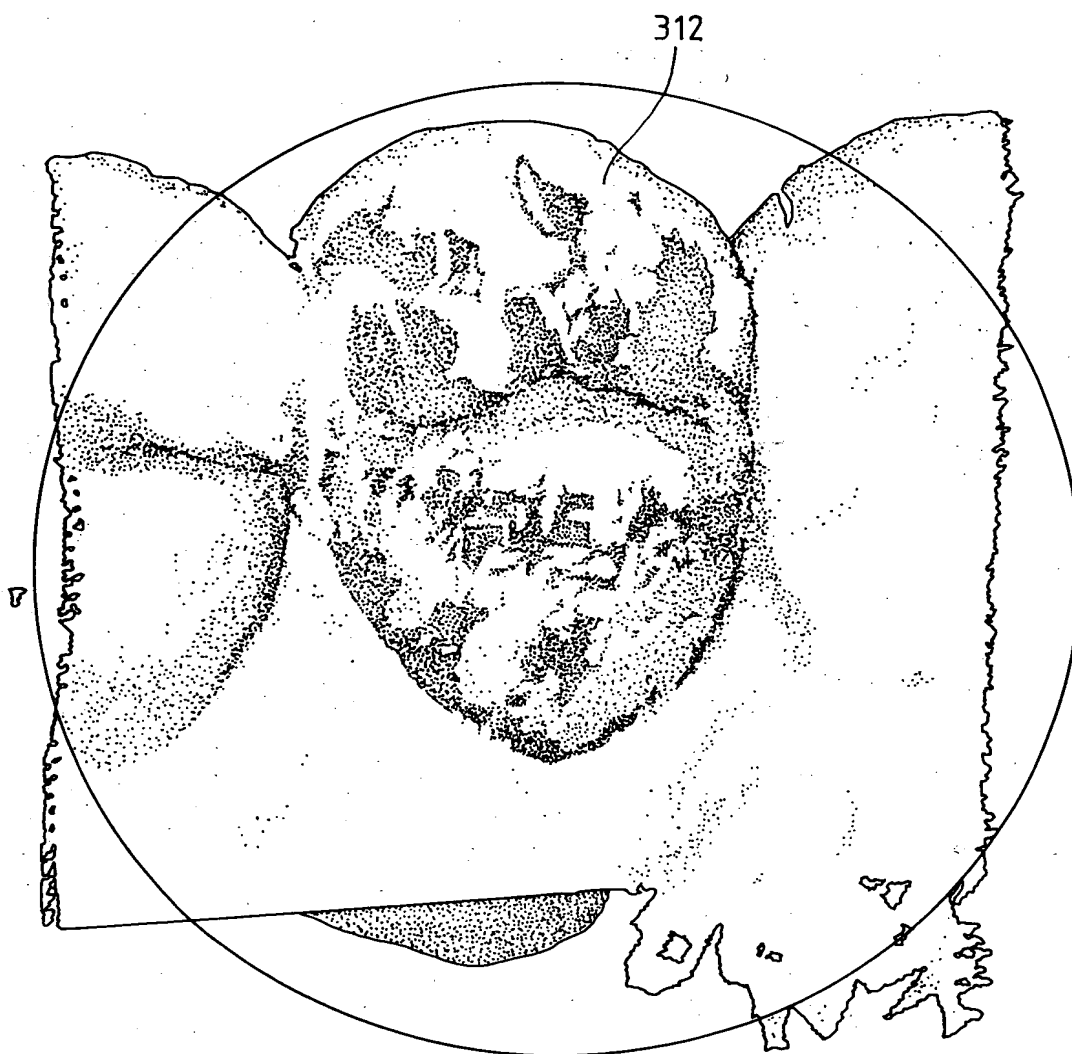
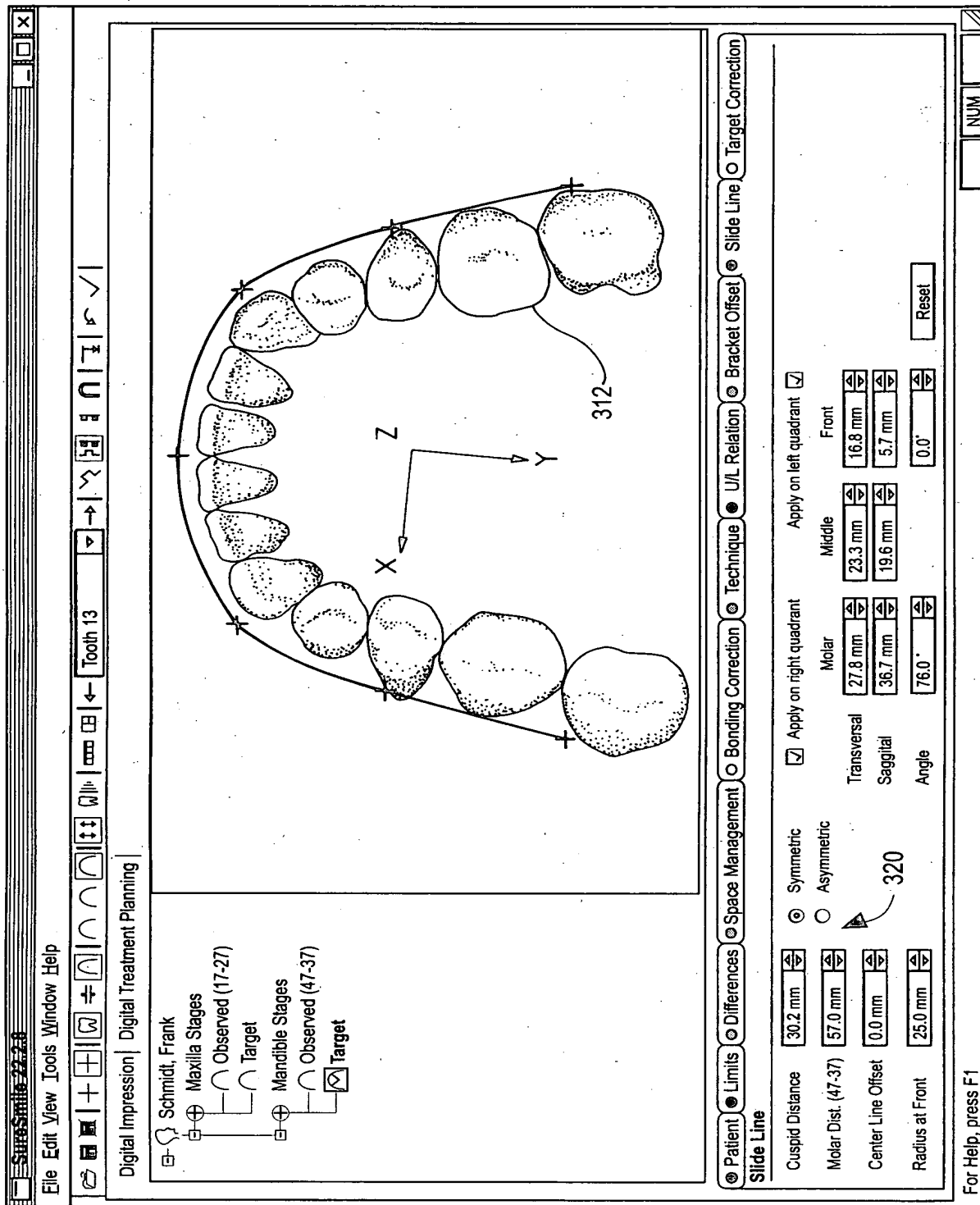


FIG. 60



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FIG. 61

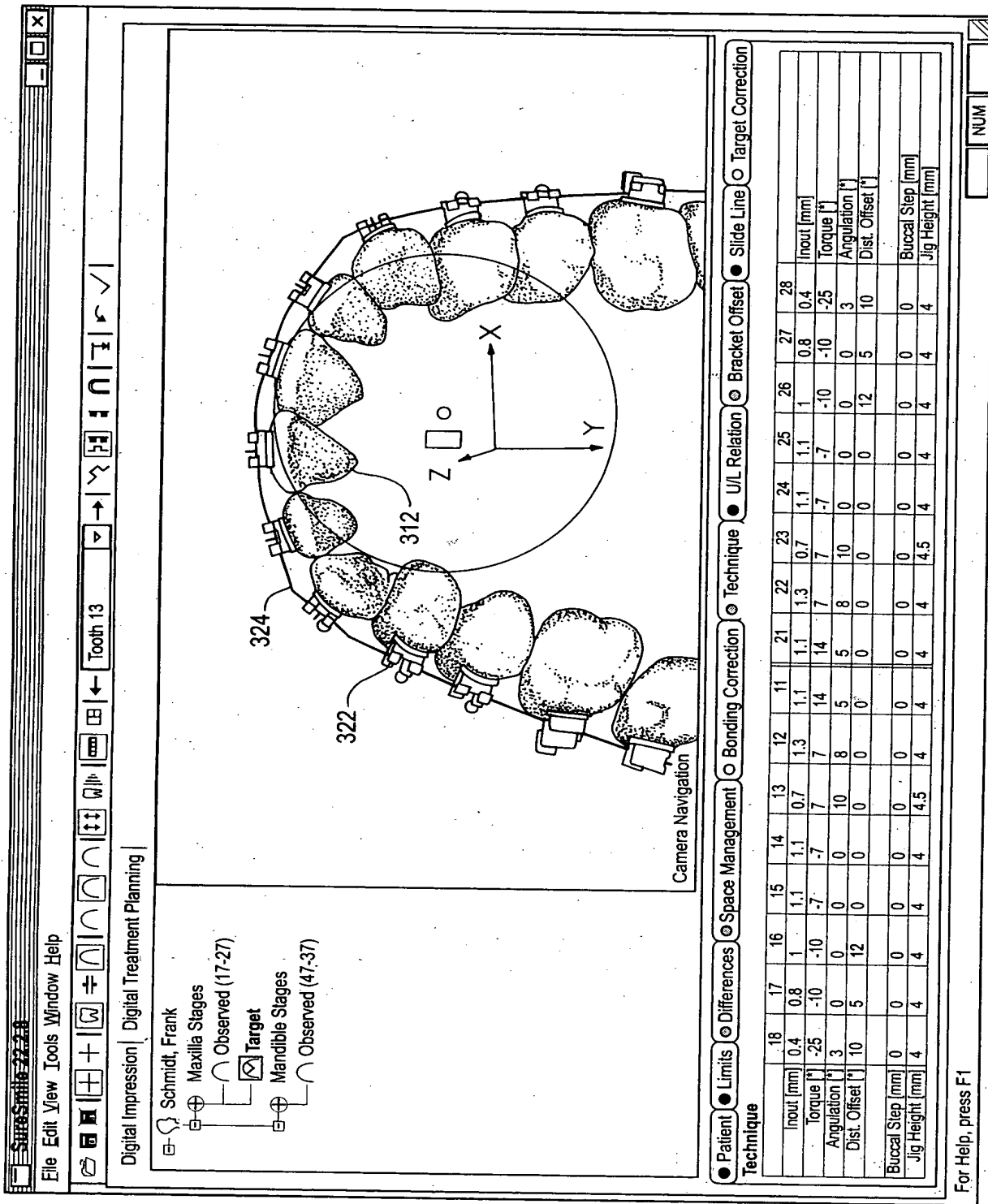


FIG. 62



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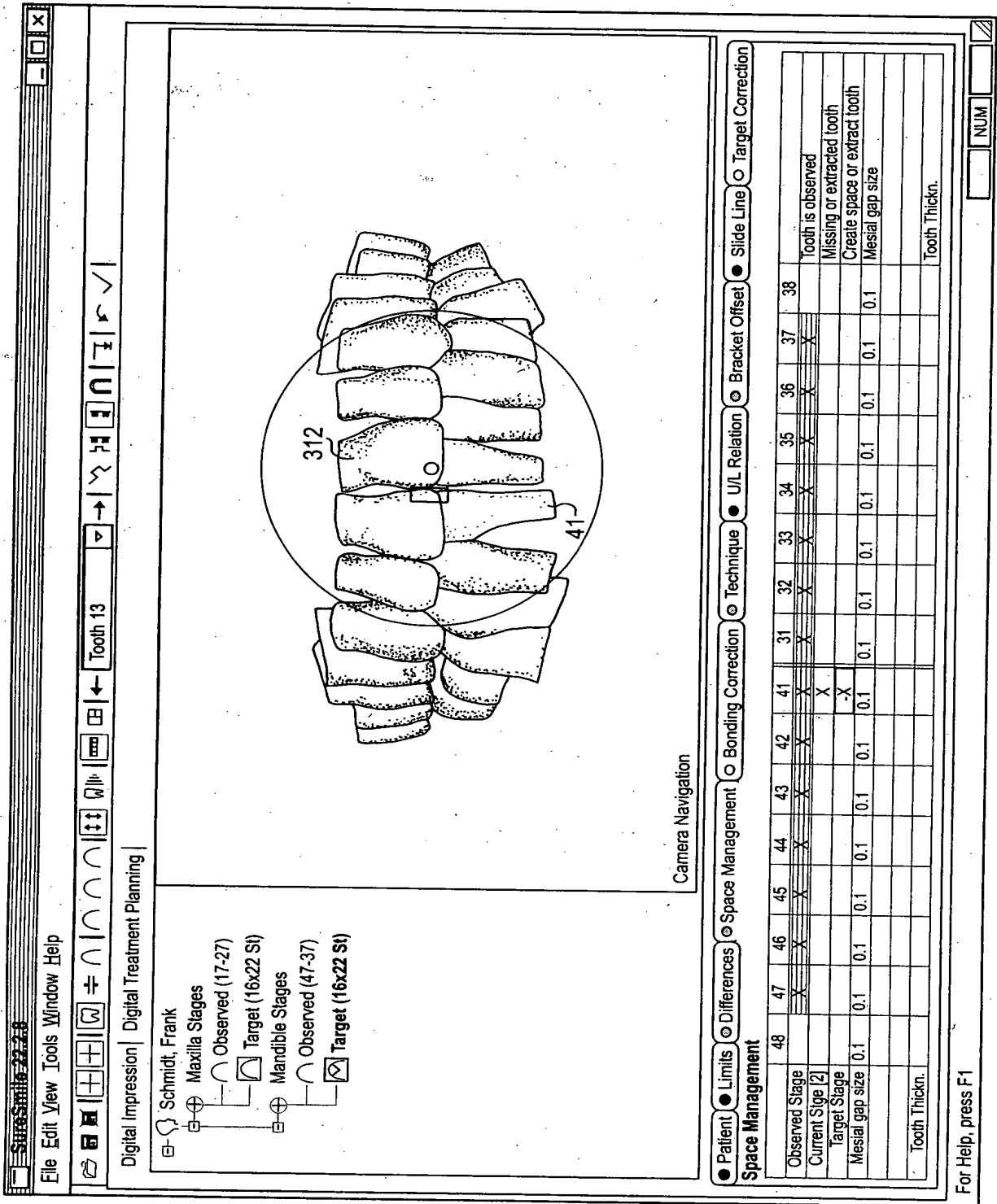
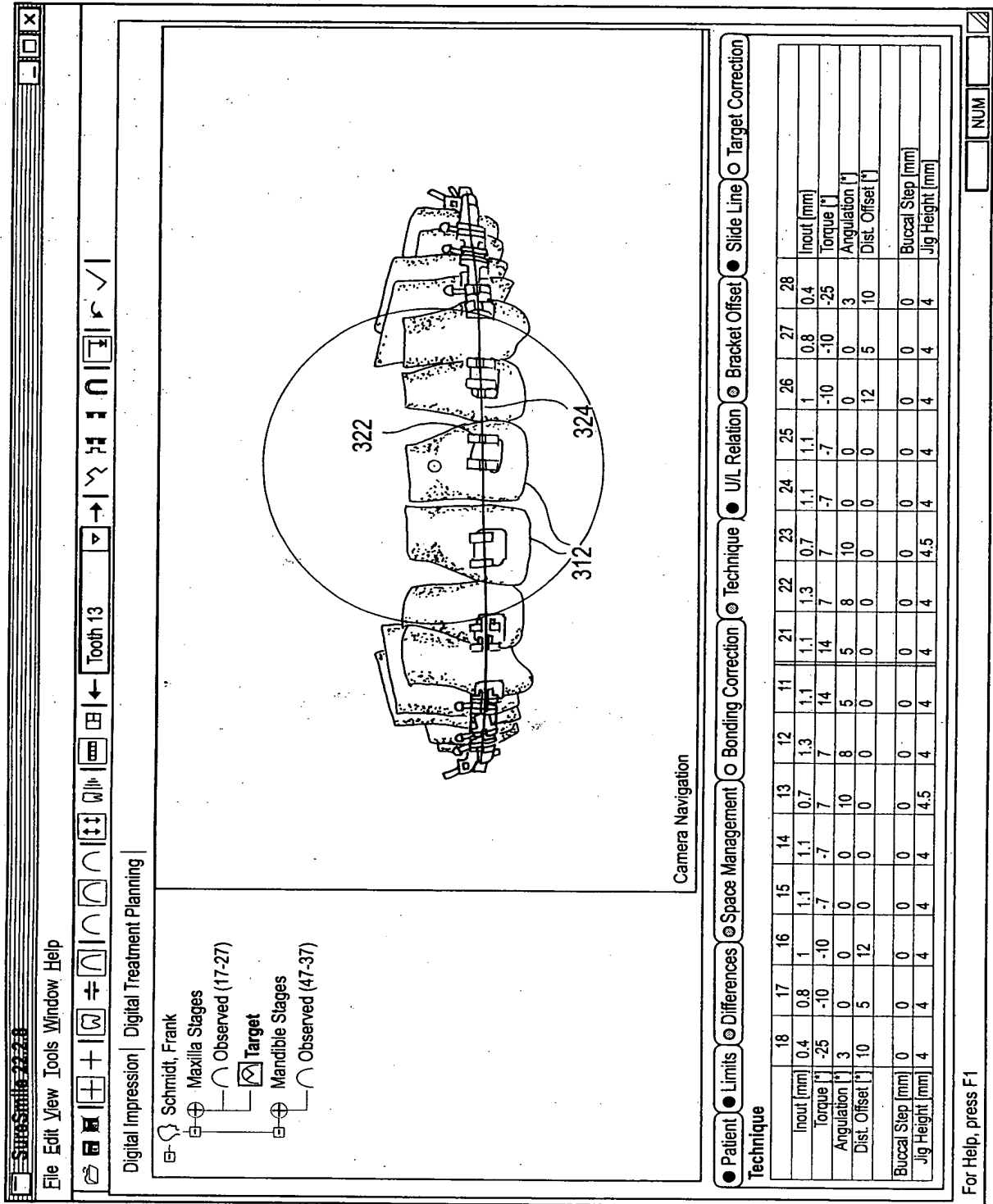
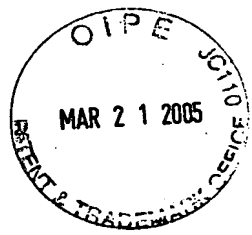


FIG. 63





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Fig. 64A

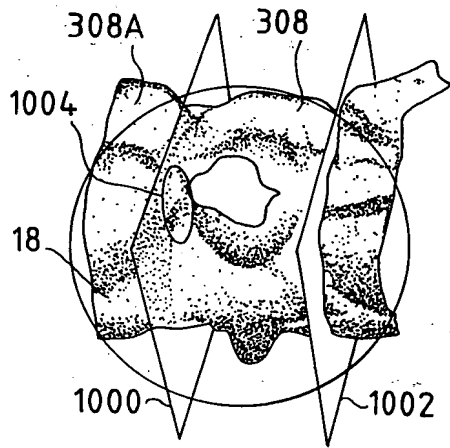


Fig. 64B

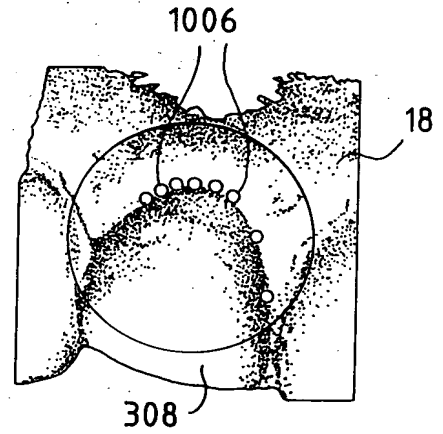


Fig. 64C

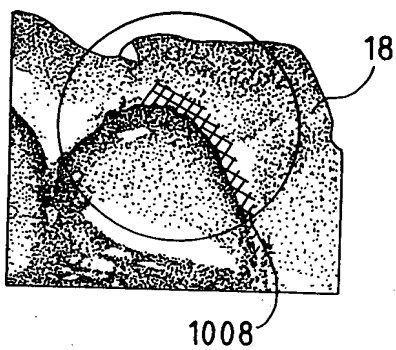
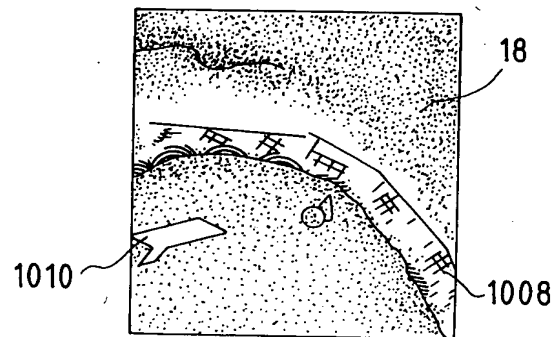


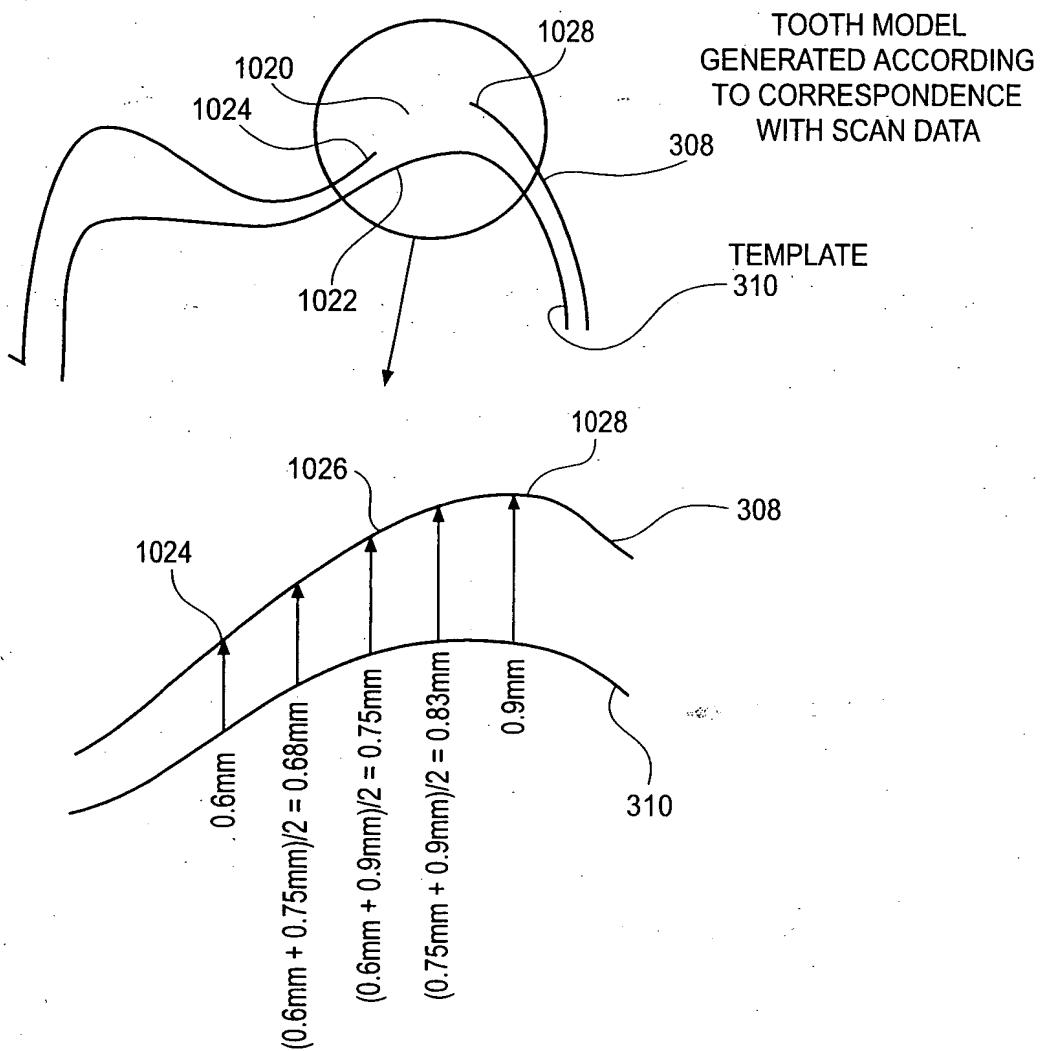
Fig. 64D





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FIG. 65



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